حمل الآن

مجانا وحصريا

المراجعة رقم (1)









Final Revision

Mr. Ahmed Elbasha

(1) Write the scientific term:

1)	The distance moved through a unit time.	(..............................)
2)	The combination of the male gamete and female gamete to form a zygote.	(..............................)
3)	The space which contains all the galaxies, stars, planets and living organisms.	(..............................)
4)	It is the speed by which the object moves when it covers equal distances at equal periods of time.	(..............................)
5)	An optical piece is thin at its center and more thick at the tips and diverging light rays falling on it.	(..............................)
6)	Asexual reproduction takes place in some plants without needing seeds but through their vegetative organs.	(..............................)
7)	A group of stars that rotate together in cosmic space by the effect of gravity.	(..............................)
8)	The angle between the reflected light ray and the normal line at the point of incidence on the reflecting surface.	(..............................)
9)	Fusion of the male gamete and the female gamete to form the zygote.	(..............................)
10)	The speed of an object relative to an observer.	(..............................)
11)	The force that controls the orbits of the planets around the Sun according to the modern theory.	(..............................)
12)	Specialized cells which produce gametes.	(..............................)
13)	Changing the position of an object as the time passes according to a fixed point.	(..............................)
14)	A point inside the lens that lies on the principal axis at mid distance between the faces of the lens.	(..............................)
15)	Something that includes all galaxies , stars, planets and living organisms.	(..............................)

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16)	The rebounding of the light to the same side when it strikes a reflecting surface.	(..............................)
17)	It is located in one of the spiral arms of the Milky Way galaxy on the edge of the galaxy.	(..............................)
18)	A medical case as a result of the formation of the image behind the retina.	(..............................)
19)	The total distance that a moving object covers divided by total time taken to cover this distance.	(..............................)
20)	The object's speed changes (increases or decreases) by equal values through equal periods of times.	(..............................)
21)	A biological process, where the living organism produces new individuals of the same kind and thus, ensuring its continuity.	(..............................)
22)	The angle between the incident light ray and the perpendicular line on the reflecting surface from the point of incidence.	(..............................)
23)	The nucleic acid that carries the genetic traits of the living organism.	(..............................)
24)	A mirror, always forms a diminished image for the object.	(..............................)
25)	The displacement in one second.	(..............................)
26)	The ability of some animals to compensate their missing parts.	(..............................)
27)	The point of connection of the two chromatids in a chromosome.	(..............................)
28)	line that passes through the optical center of the lens without passing through the two centers of curvature of its faces .	(..............................)
29)	The distance between the pole of a spherical mirror and its center of curvature.	(..............................)
30)	The speed of a moving body that covers equal distances at unequal time intervals.	(..............................)
31)	The speed of a moving object relatively to a constant or a moving observer.	(..............................)
32)	The mirror, whose reflecting surface is a part of the inner surface the sphere.	(..............................)
33)	A point inside the lens lies on the principal axis in the mid distance between its faces.	(..............................)

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34)	The nucleic acid that carries the genetic traits of the living organisms.	(..............................)
35)	Bouncing of the light to the same side when it strikes a reflecting surface.	(..............................)
36)	The straight line that passes by center of curvature of the mirror and its pole.	(..............................)
37)	A glowing gaseous sphere formed the planets of the solar system.	(..............................)
38)	It's a mirror that its reflecting surface is a part of a hallow sphere.	(..............................)
39)	The mid-point on the reflecting surface of the mirror.	(..............................)
40)	The part in the cell which is responsible for cellular division .	(..............................)
41)	The incident light ray, the reflected light ray and the normal line all lie in the same plane perpendicular to the reflecting surface.	(..............................)
42)	The combination of a male gamete and a female gamete to from a zygote.	(..............................)
43)	A type of asexual reproduction that occurs in simple algae.	(..............................)
44)	A phase in which some important vital processes occur to prepare the cell for division and the amount of genetic material duplicates.	(..............................)
45)	It is a theory that explains the origin of the universe from a massive explosion since 15000 million years .	(..............................)
46)	The mass of cells which result from the abnormal cell when it is continually divided without controlling.	(..............................)
47)	It is a very thin plastic lenses and can stick to the eye cornea.	(..............................)
48)	A disease that infects the eye lens and it becomes opaque.	(..............................)
49)	A vector quantity that equals the displacement in one second.	(..............................)
50)	Chemically consists of DNA and protein.	(..............................)

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51)	Fibers extend between the two poles of the cell in prophase.	(..............................)
52)	The image that cannot be received on the screen.	(..............................)
53)	A theory assumed that the solar system was originally a big star which is the Sun.	(..............................)
54)	A flat gaseous round disk that formed the solar system planets according to the perception of "Laplace" scientist.	(..............................)
55)	A cell division that occurs in the somatic cells and results in the growth of the living organism.	(..............................)
56)	The actual length of the path that a moving object takes from the starting point of movement to the end point.	(..............................)
57)	It is located in one of the spiral arms of the Milky Way on the edge of the galaxy.	(..............................)
58)	The line between the two centers of curvature of the lens passing by the optical center of the lens.	(..............................)
59)	The phase which the cell prepares to division by the genetic material (DNA) duplicates.	(..............................)
60)	The displacement covered through a unit time .	(..............................)
61)	The point of connection of two chromatids of the chromosome together.	(..............................)
62)	A type of asexual reproduction that takes place in plants' vegetative organs without the need of seeds.	(..............................)
63)	A theory based on an astronomical phenomenon in which a star was glowing for a short time , and then its glowing disappears gradually.	(..............................)
64)	The value of an object's speed relative to the observer.	(..............................)
65)	The total distance covered by a moving body divided by the total time.	(..............................)
66)	The physical quantity that has magnitude only and has no direction .	(..............................)
67)	A mirror can be used to get virtual, upright and magnified image of an object.	(..............................)

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68)	Angle of incidence of the light ray equals its angle of reflection.	(..............................)
69)	A mirror used to form virtual, upright and diminished image.	(..............................)
70)	The line that joins between the two centres of curvature of the lens passing by the optical centre of the lens.	(..............................)
71)	Half the diameter of the sphere, where the face of the lens is a part of it.	(..............................)
72)	It is the point of collection of the refracted light rays or their extensions which are produced, when the light rays fall parallel to the principal axis of a lens.	(..............................)
73)	Seeing the near objects clearly and seeing the far objects distorted.	(..............................)
74)	A flat gaseous round disk that formed the solar system.	(..............................)
75)	The biggest star that can be seen by people clearly on the Earth.	(..............................)
76)	The scientist who established the nebula theory.	(..............................)
77)	A theory assumed that the solar system was originally the Sun.	(..............................)
78)	The unit which is used for measuring the distance between celestial bodies.	(..............................)
79)	It is a wide and extended space that contains all the galaxies, stars and planets.	(..............................)
80)	A theory explains the origin of the universe from a massive explosion since 15000 million years.	(..............................)
81)	The theory that is explained the formation of the galaxies and the stars.	(..............................)

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✹(2) Choose the right answer:

1.The crossing over phenomenon takes place at the end of ....

a. prophase I. b. metaphase I. c. anaphase I. d. telophase I.

2.The ability of some animals to compensate their missing parts is called the ....

a. budding. b. regeneration. c. sporogony. d. sexual reproduction.

3.The line between the centers of curvature of the lens passing by the optical centre of the lens is called the ....

a. focal length. b. principal axis. c. secondary axis. d. radius of curvature.

4.If the speed of a car is 72 km/hour, this means that its speed equals .... *m/s.*

a. 18 b. 20 c. 40

5.The spindle filaments appear during cell division in ....

a. telophase . b. interphase. c . prophase.

6.The image of the object that lies at the center of curvature of a concave mirror is ...

a. real, inverted and enlarged.

b. real , upright and equal to the object.

c. real, inverted and equal to the object.

d. virtual, upright and equal to the object.

7.If the chromosomal number in the male gamete of an organism is 20 so, the chromosomal number in the liver cell equals ....

a. 5 chromosomes. b. 10 chromosomes. c. 20 chromosomes. d. 40 chromosomes.

8.................... established the crossing star theory.

a. Laplace b. Fred Hoyle c. Hubble d. Chamberlain

9.The centromere of each chromosome divides longitudinally and the spindle fibers contract in mitosis during ....

a. prophase. b. metaphase. c. anaphase. d. telophase.

10.The number of chromosomes in the gamete is .... the number of chromosomes in the original cell.

a. equal to b. half c. quarter d. double

11.When the body covers equal distances at unequal periods of time, the speed will be ...

a. regular. b. decelerated. c. accelerated. d. irregular.

12.All the following cells contain full copy of genetic material except ....

a. spore. b. bud. c. zygote. d. pollen grain.

13.The uniform acceleration means that the object speed .... by equal values through equal periods of time.

a. increases only b. decreases only

c. increases or decreases d. doesn't change

14.From the scalar physical quantities is the ....

a. acceleration. b. time. c. velocity. d. displacement.

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15. The object moves at a constant (uniform) speed when ....

a. it moves at a constant acceleration.

b. it covers equal distances at unequal times.

c. it covers equal distances at equal times.

d. no correct answer.

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16. A concave mirror with a focal length of 20 cm, and the object is placed at a distance of 50 cm from the mirror, the image is formed at a distance ....

a. more than 40 cm. b. more than 20 cm and less than 40 cm.

c. equals 20 cm. d. equals 60 cm.

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17. Yeast fungus reproduces asexually by ....

a. regeneration. b. binary fission. c. budding. d. spore.

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18. The solar system consists of the Sun and .... planets revolve around it.

a. 7 b.8 c .9 d. 10

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19. The image formed by .... is always virtual, erect and small.

a. convex lens b. concave mirror

c. plane mirror d. convex mirror and concave lens

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20. The speed of a moving object relative to the observer is considered as .... speed.

a. regular b. average c. vector d. relative

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21. If an object at a distance of 3 metres from a plane mirror. The distance between that object and its image is .... metre.

a. 3 b. 6 c.9 d. 12

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22. If the number of chromosomes in liver cells of a certain living organism is (32) chromosomes then the number of chromosomes in ovum cell is ....

a. 8 b. 16 c. 24 d. 32

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23. The optical piece which forms laterally inverted (reversed) image and equal to the body is ....

a. convex lens b. concave lens c. spherical mirror d. plane mirror.

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24. When a moving object covers equal distances in unequal intervals of time, so it moves by ....

a. average speed. b. relative speed. c. uniforms speed. d. irregular speed.

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25. The scientist who published a research including his vision about the Nebular assumption ....

a. Chamberlin. b. Laplace. c. Fred Hoyle. d. Molten.

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26. An object was put at 10 cm from a concave mirror, a real, inverted and equal image was formed, if the object moved 3 cm towards the mirror, so the formed image will be ....

a. real, inverted and diminished. b. real, inverted and enlarged.

c. virtual diminished. d. virtual enlarged.

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27.An observer in a moving car with 80 km/h was observing a moving car with 90 km/h in the same direction so, the observed speed of the 2nd car is ....

a. 10 km/h . b. 80 km/h. c. 90 km/h. d. 170 km/h.

28.The .... is the phase in which the cell is prepared for division by doubling the genetic material .

a. prophase b. interphase c. metaphase d. anaphase

29.A concave mirror has a focal length of 8 cm. An object is placed in front of this mirror forming an image at a distance 20 cm from the mirror. This means that the object is placed at .... from the mirror.

a. 8 cm. b. less than 8 cm.
c. 20 cm. d. more than 8 cm. and less than 16 me.

30.A doctor advised a person who has a sight defect to use glasses with convex lenses. It means that this person suffers from ....

a. a decrease in the convexity of the eye lens surface.
b. an increase in the convexity of eye lens surface.
c. an increase in the eyeball diameter.
d. disability of seeing far objects clearly.

31.Reproduction by spores occurs in all the following organisms, except ....

a. starfish. b. fungus. c. bread mould. d. mushroom.

32.One of the vector physical quantities is ....

a. time of a car trip. b. length of a pen.
c. mass of a cat. d. force by which person pushes a stone.

33.A short sighted person sees the far objects distorted as their images formed ....

a. on the retina. b. behind the retina.
c. in front of the retina. d . in front of the lens .

34.From examples of the scalar physical quantities is ....

a. the velocity. b. the mass. c. the force . d. the acceleration.

35.The cell that never divide is ....

a. adult red blood cells. b. the stomach.
c. the liver. d. the skin.

36.Paramecium is a protozoan that reproduces by ....

a. spores. b. budding . c. regeneration. d. binary fission .

37.reproduction which considered as a source of genetic variation is ……. reproduction.

a. vegetative b. budding c. sexual d. regeneration

38.The scientist who established the nebular theory is ....

a. Chamberlain . b. Moulton. c. Fred Hoyle. d . Laplace.

39.(Speed - time) graph for a regular motion at a constant speed is a straight line is ......

a. curved . b. passing by the origin point.
c. parallel to x-axis. d. parallel to y-axis.

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40. When an object is placed to face a convex mirror, the image formed is ....

a. lies behind the mirror. b. is real.
c. is erect. d. (a) and (c).

41. Fred Hoyle relates controlling the Sun in the orbits of the planets around it to .... of the Sun.

a. temperature b. rotation speed c. attraction force d. glowing

42. The chemical structure of the chromosome is ....

a. the nucleic acid only. b. protein and nucleic acid.
c. protein, fats and nucleic acid. d. all the previous.

43. The two gases which produced galaxies, stars and universe through millions of years are ....

a. oxygen & helium. b. helium & hydrogen.
c. oxygen & carbon dioxide. d. helium & carbon dioxide.

44. The universe contains ....

a. galaxies & stars. b. planets and moons .
c. living organisms. d . all the previous.

45. From the properties of the image formed by a convex mirror is ....

a. virtual. b. real. c. upright. d. (a) and (c) together.

46. If a person stands at a distance 2 m from a plane mirror, the distance between the person and his image is ....

a. 1 m. b. 2 m. c. 3 m. d. 4 m.

47. The value of change of an object speed in one second is called ....

a. velocity. b. displacement. c. acceleration. d. speed.

48. Our solar system is located in one of the .... arms of the Milky way galaxy.

a. spiral b. straight c. circular d. oval

49. From the scalar quantities ....

a. the time. b. the force. c. the acceleration. d . the displacement.

50. Spindle fibers appear during the cell division in the ....

a. telophase. b. interphase. c. prophase. d. metaphase.

51. When an object acceleration equal zero this means that ....

a. the body acceleration is decreasing. b. the body speed is variable.
c. the body acceleration is increasing. d. the body speed is uniform.

52. Within minutes of the Big Bang, the percentage of hydrogen in the universe was ......

a. 25% b. 50% c. 75% d. 100%

53. The distance and displacement are equal when the body moves in a ....in one direction.

a. zigzag b. circular c. straight line d. curved

54. The two factors in which the movement of an object can be described ....

a. speed and time. b. distance and time. c. area and time.

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55.Property of the image of the object formed by the plane mirror always be ....

a. larger than the object. b. equal to the object. c. smaller than the object.

56.scientists believe that the universe emerged from massive explosion and it is in ....

a. continues contraction. b. contraction then expansion.
c. expansion then contraction. d. continues expansion .

57.If a light ray falls passing through the optical centre of the convex lens, it leaves the lens ....

a. passing through the focus. b. parallel to the principal axis. c . without refraction.

58.The continuous expansion of the universe, is due to ....

a. separation of galaxies. b. approaching of galaxies. c. equivalent to galaxies.

59.The founder of modern theory of the solar system is .... scientist.

a. Moulton b. Chamberlain c. Fred Hoyle

60.The image formed by using a concave lens is ....

a. real , enlarged, and inverted.
b. virtual, smaller and inverted.
c . virtual, smaller and upright.

61.At the end of this phase, the nucleolus and nuclear membrane disappear from the mitosis division ....

a. prophase. b. metaphase. c. telophase.

62.When an object is placed between the focus of a convex lens and its center of curvature, the formed image will be ....

a. real, inverted and diminished. b. real, inverted and magnified.
c. virtual, erect and magnified. d. virtual, erect and diminished.

63.The result of multiplying a speed of moving object by time ....

a. acceleration. b. mass . c. distance. d. force.

64..................... began to form after 3000 million years after the Big Bang.

a. galaxies. b. ancestral galaxies. c. the Sun. d. the Earth.

65.If the length of the radius of curvature of concave mirror 20 cm, then the focal length of the mirror equals ....

a. 5 b. 10 c. 15 d . 20

66.The Milky Way galaxy took its disc form after about .... million years after the Big Bang.

a. 1000 b. 3000 c. 5000 d. 10000

67.From the examples of the vector physical quantities is ....

a. time. b. force . c. mass. d. length.

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68.The optical piece which forms an image that inverted and equal to the object is ....

a. concave lens. b. concave mirror.

c. convex mirror. d. plane mirror.

69.The nucleolus disappears during the mitosis cell division in ....

a. prophase. b. metaphase. c. anaphase. d. telophase.

70.(Distance - time) graph for an object moves at regular speed is represented by a straight line ....

a. parallel to time axis. b. parallel to distance axis .

c. passing through the origin point. d. (a) and (c) together.

71.The source of genetic variation is the .... reproduction.

a. budding b. vegetative. c. sexual. d . regeneration.

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✹(3) Complete the following:

1. The Sun and the surrounding planets revolve around the center of .... galaxy.
2. Mitosis occurs in the .... cells of living organisms.
3. Distance is a .... physical quantity, while force is a .... physical quantity.
4. The scientist who established the modern theory about the evolution of the solar system is ....
5. The distance that a moving object covers within a unit time is known as ....
6. The incident light ray which is parallel to the principal axis of a concave mirror reflects passing through ....
7. The scientists believe that the matter of the universe was a .... ball of high pressure and high temperature.
8. The long-sighted person needs glasses of .... lens.
9. Vegetative reproduction in plants happens by .... division.
10. .... scientist who founded the nebular theory.
11. The spindle fibers are formed during the cell division in ....
12. .... are formed of groups of stars in the universe.
13. Acceleration is considered one of .... physical quantities , while time is considered one of .... physical quantities.
14. The solar system is located in one the .... arms of the Milky Way on the edge of the galaxy.
15. Somatic cells are divided by .... , while reproductive cells are divided by ....
16. In Milky Way galaxy, the old stars (the older) gather in the .... of the galaxy.
17. The incident light ray that passes through the focus of the convex lens, it exits from the lens ....
18. Mass is considered from .... physical quantity.
19. From the scalar physical quantities is ...., while .... is from the vector physical quantities.
20. Condensing the cytoplasm in the two poles of the plant cells forms ....
21. Crossing over phenomenon happens between the .... during the meiosis division.
22. In human and animals, meiosis occurs in .... to produce the male gametes, while it occurs in .... to produce the female gametes.

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23. vision defect which is due to the decrease in the eyeball diameter is called .... and is corrected by .... lenses .
24. The two factors which can be used to describe the motion of a body are the.................... and ....
25. The Big Bang theory explain the origin of .... , while the nebular theory is one of the theories which explain the origin of ....
26. In animal cell spindle fibers formed from .... , while in plant cell spindle fibers form .... at the poles.
27. The galaxy that solar system belongs to is called ....
28. The image formed by concave lens is always .... erect and diminished.
29. The nucleolus and nuclear membrane disappear at the end of .... of mitosis.
30. The change of an object position as time passes according to the position of another fixed object is called ....
31. The contact lenses are used instead of the .... and it is made of ....
32. The convex lens .... the light, while the convex mirror . ... the light.
33. The solar system is located in one of the spiral arms of the .... on the ....
34. movement path in one direction may be .... , ... or a combination of both .
35. The cell .... contains the genetic material of the living organism which consists of a number of ....
36. When the object lies in front of .... lens, a virtual and diminished image is formed.
37. The yeast fungus reproduces by .... , while the starfish reproduces by ....
38. The .... scientist established the modern theory of evolution of the solar system.
39. The Egyptian scientist Mustafa El Said discovered a way to detect the cancer cell by using ....
40. A short-sighted person needs a medical eye glasses with .... lenses .
41. The chromosome chemically consists of nuclear acid called DNA and ....
42. The spindle fibers in the animal cell is formed from ...., while in the plant cell the spindle is composed form the .... at the cell poles.
43. From the examples of the multicellular organisms reproduced by budding is ....
44. The point that lies in the middle of the reflecting surface of the concave mirror is called ....

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45. The displacement covered by a body in one second is called ....
46. Speed measuring unit is .... , while the measuring unit of acceleration is ....
47. The crossing over phenomenon occurs in .... of .... division .
48. .... and .... are types of spherical mirrors.
49. The Sun and the planets revolving around it, rotate around the center of .... galaxy.
50. .... reproduction doesn't required neither special systems nor structures in the living organisms.
51. .... are used instead of medical glasses to treat vision defects.
52. When the object is placed at .... of the convex lenses, there is no image will be formed.
53. The moving car with 50 Km/h in constant direction its speed appears at 110 Km/h related to observer moves with 60 Km/h in .... direction of the car motion.
54. The crossing over phenomenon occurs in .... of first meiosis division.
55. The solar system consists of a number of .... planets revolve around the Sun.
56. The physical quantity that its magnitude and direction are necessary for identifying it is called ....
57. A concave mirror has a focal length of 20 cm , then the radius of curvature of its spherical surface equals ....
58. Correcting long-sightedness by using .... lens and correcting short-sightedness by using .... lens.
59. Yeast fungus reproduces asexually by ...., while the amoeba reproduces asexually by ....
60. .... image can be received on a screen .
61. The stars move in a fixed orbit around the center of the ....
62. The measuring unit of acceleration is ....
63. Asexual reproduction takes place by .... in the yeast fungus.
64. We use .... lens to obtain a virtual and magnified image.
65. The straight distance covered by the object in a certain direction is called ....
66. The .... telescope is from the space telescopes.
67. The spindle fibers are formed during the cell division in ....
68. The double of the distance between the optical center of a lens and its focus= ....

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69. The velocity is the .... in one second.

70. Force is considered .... physical quantity and mass is considered .... physical quantity.

71. two factors which can be used to describe the motion of the body are .... and ....

72. The (speed - time) graph of motion at uniform speed is represented by a .... line

73. The product of the speed of the body x the time = ...

74. If the body moves from rest, so its initial speed equals ....

75. .... is the change of an object's position as time passes according to the position of another object.

76. The graphical relation (speed - time) for regular motion at uniform speed is represented by a straight line . ... to the time axis.

77. The secondary axis of the spherical mirror is any straight line that passes by .... and any point on its surface except....................

78. The short-sighted person needs a medical eye glasses with .... lenses .

79. vision defect which is due to a shortness in the radius of the eyeball is called ....

80. A point inside the lens lies on the principal axis in the mid distance between its faces is called ....

81. point that is in the middle of the reflecting surface of the concave mirror is called ......

82. The phenomenon of the light bouncing off in the same medium when it meets the reflecting surface is called ....

83. The scientist who established the crossing star theory is ....

84. The Sun takes about .... years to complete one rotation around ....

85. The stars move in fixed orbits around the center of the ....

86. The two gases which produced galaxies, stars through millions of years are .... and ....

87. The founder of nebular theory is ....

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✸(4) Correct the underlined words:

1	The solar system includes **nine** planets revolve around the Sun.	…………………….
2	The chromosome consists of two chromatids connected at the **cytoplasm**.	…………………….
3	Nebular theory suggested that the solar system originated from a glowing gaseous sphere revolving around the **Sun**.	…………………….
4	The two gases which produced the galaxies, stars and universe over millions of years are helium and **nitrogen**.	…………………….
5	The relative speed of a moving car to an observer at rest is **less than** the real speed .	…………………….
6	Reproduction by spore propagation occurs in **paramecium**.	…………………….
7	Meiosis happens in the **somatic cells.**	…………………….
8	The formed image by the plane mirror is **real and inverted.**	…………………….
9	The Sun takes about **100** million years to complete one rotation around the center of the galaxy.	…………………….
10	If the speedometer points to 72, this is equivalent to **15** m/s.	…………………….
11	In **convex** mirror, the image is inverted and equal to the object.	…………………….
12	Many scientists believe that the universe emerged from a massive explosion **500 thousand years** ago .	…………………….
13	The chromosomes chemically consists of nuclear acid called (DNA) and **fats**.	…………………….
14	If the radius of curvature of a concave mirror equals 20 cm. its focal length will be **30** cm.	…………………….
15	In meiotic cell division, Crossing over phenomenon occurs at the end of **Anaphase 1**.	…………………….
16	The scientist **laplace** assumed the modern theory about the origin of solar system.	…………………….
17	Concave lens **converges** the light rays that falling on its surface.	…………………….
18	Sudden violent **chemical** reactions occur within the star which led to its explosion.	…………………….

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19	Reproduction by sporogony occurs in **starfish**.	……………………..
20	The long-sightedness is corrected by using **concave mirror.**	……………………..
21	Amoeba reproduces by **budding**.	……………………..
22	The formed image of an object that is put at **the centre of curvature** for a convex lens is virtual enlarged.	……………………..
23	The spindle fibers are formed in the plant cell from the **centrosome**.	……………………..
24	Chromosomes are arranged at the middle of the cell in the **telophase**.	……………………..
25	Contact lenses can stick to eye **iris** and can be removed easily.	……………………..
26	**Acceleration** is the actual length of the path that a moving object takes from the starting point of movement to the end point.	……………………..
27	The clear vision for a normal vision person remains, if the object comes closer at a distance not less than **60** cm.	……………………..
28	A phase where some important biological processes occur to prepare the cell for division is called **prophase**.	……………………..
29	Velocity is the quantity that we can identify it accurately by knowing its **magnitude only.**	……………………..
30	If an object is put in front of concave mirror at **focus**, the formed image is real, inverted and equal to the object.	……………………..
31	**Crossing star** is a glowing gaseous sphere revolving around itself, from which the solar system was originated.	……………………..
32	**Average speed** is the speed of a moving object relative to a constant or a moving observer.	……………………..
33	The chromosome consists of two chromatids connected together at the **nucleus**	……………………..
34	The speed of a car can be identified directly by using the **compass**.	……………………..
35	In the universe , groups of **planets** are gathered to form the galaxies.	……………………..
36	When the light ray falls by an angle of **30°** on the reflecting surface, so the reflected ray will be perpendicular on the reflecting surface.	……………………..

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37	The parent individual disappears during the reproduction by **sporogony**.	…………………….
38	The universe emerged from the particles of **oxygen and nitrogen.**	…………………….
39	The spindle fibers in the animal cell is formed from **condensing the cytoplasm.**	…………………….
40	The lens is a transparent medium that **reflects** the light.	…………………….
41	In plane mirror the object distance from the mirror is **larger than** the image distance.	…………………….
42	**Asexual** reproduction is a source of genetic variation.	…………………….
43	The Sun takes about **250** million years to complete one rotation around the center of the galaxy.	…………………….
44	If two cars moving in the same direction at the same speed equal 120 m/sec., so the relative speed equal **60 m/sec**.	…………………….
45	**The scientist Isaac Newton** published a research entitled "world order" and that was in 1796.	…………………….
46	**Mitotic cell division (mitosis)** aims to produce gametes.	…………………….
47	Yeast fungus reproduce asexually by **regeneration**.	…………………….
48	The lens is a transparent medium that **reflects** the light and defined with two spherical surfaces.	…………………….
49	Amoeba reproduces by **Budding**.	…………………….
50	The old stars are gather in the **edges** of the galaxy.	…………………….
51	The word ambulance is written on ambulance cars **minimized**.	…………………….
52	Number of chromosomes in an ovum cell containing **double** number of chromosomes in the one of liver cells.	…………………….
53	The **force** is the length of the shortest straight line between two position.	…………………….
54	It is a cell produced due to fertilization called **tetrad** .	…………………….

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55	**The lion** is considered one of the fastest wild animals.	………………………
56	The chromosome chemically consists of nuclear acid called DNA and **starch**.	………………………
57	**The irregular speed** is the value of displacement at a unit time and is a vector quantity.	………………………
58	**The crossing star** is the largest star that can be seen from the surface of the Earth.	………………………
59	In the Big Bang theory explains that the universe is formed by the cohesion of **Oxygen** and Nitrogen particles.	………………………
60	Chromosomes pairs arranged on the cell's equator in **anaphase 1.**	………………………
61	the solar system is located in one of the **circular** arms of the Milky Way galaxy.	………………………
62	When putting a body on a distance of 16 cm from a concave mirror its focal length is 12 cm, then the image formed will be **virtual upright** and magnified image.	………………………
63	Displacement is described by magnitude and **time**.	………………………
64	a boat starts to move from rest till its speed becomes 2.5 m./sec. through 5 sec. this means that it moves with acceleration **10** m/sec^2	………………………
65	The total distance covered by a moving body divided by the total time taken equals the **non-uniform speed.**	………………………
66	The **incident light** ray is the light ray that bounces from the reflecting surface.	………………………
67	A concave mirror of focal length 10 cm , so its radius of curvature equals **5 cm.**	………………………
68	**The focus** is a point inside the lens placed on the principal axis in the mid distance between its faces.	………………………
69	When an object is placed at the centre of curvature of the mirror, the formed image is real , inverted and **enlarged**.	………………………
70	The **real** image cannot be received on a screen.	………………………
71	A spherical mirror whose diameter is 40 cm, so its focal length equals **40 cm.**	………………………
72	Eight planets including the Earth rotate around the **galaxy**.	………………………

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✹(5) Give reason for:

1. Displacement is a vector quantity.

....

2. focal length of a concave mirror can be determined by knowing its radius of curvature.

....

3. The continuous expansion of space.

....

4. The image formed by the convex mirror can't be received on a screen.

....

5. The formed image by the convex mirror is always virtual.

....

6. Occurrence of interphase before starting the cell division .

....

7. When the object is placed at the focus of a convex lens, the image is not formed.

....

8. There are no new races of grapes , when they reproduce by vegetative reproduction.

....

9. The nebula lost its sphere form and became in a form of a flat rotating disk.

....

10. The body which moves at acceleration can't move at a regular speed.

....

11. Shrinking of spindle fibers during the anaphase.

....

12. (Distance - Time) graph of an object that moves at uniform speed is a straight line passing through the origin point.

....

13. Asexual reproduction in living organisms produces individuals identical in genetic structure.

....

14. Word ambulance is written in a converted (laterally inverted) way on the ambulance car.

....

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15. The short-sightedness is corrected by using a concave lens.

....

16. Cellular division begins with interphase before starting mitosis division.

....

17. The lens had two centers of curvature (C1 and C2).

....

18. Binary fission is considered a mitotic division.

....

19. The force is a vector quantity.

....

20. Uniform speed for a car hard to done practically.

....

21. Crossing over phenomenon is an important factor in genetic variation among individuals of the same species.

....

22. Meiotic division is called by reduction division.

....

23. Pilots take in consideration the velocity of the wind.

....

24. The image formed by a plane mirror cannot be received on the screen.

....

25. When you look at the mirror you see your face image.

....

26. Mitosis is important for children, unlike the meiosis.

....

27. The perpendicular incident light ray on plane mirror reflects on itself.

....

28. Cataract disease infects the eye.

....

29. Sexual reproduction is a source of genetic variation .

....

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30. There are no new races (new individual with other trait) of plants, when they reproduce by vegetative reproduction.

....

31. Occurrence of interphase before starting the mitosis cell division.

....

32. The constancy of the planets in their orbits around the Sun.

....

33. The concave lens is used to treat a short-sightedness person.

....

34. The word "AMBULANCE" is written laterally inverted way on the ambulance car.

....

35. The Sun escaped from the gravity of the huge star in the crossing star theory.

....

36. The number of chromosomes is constant in the same species which reproduce sexually.

....

37. In short-sightedness , the retina is far from the eye lens.

....

38. The object which moves at regular speed , its acceleration equals zero.

....

39. Distance is a scalar physical quantity.

....

40. Speed of a moving body increases by decreasing time needed to cover a certain distance.

....

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✸(6) What happen if:

1. Absence of centrosome in the animal cell.

....

2. A light ray is incident passing through the optical center of a convex lens.

....

3. Less convexity of the eye lens surfaces.

....

4. Approaching of a huge star to the Sun according to the crossing star theory.

....

5. When an injured liver or cutting a part of it.

....

6. To the displacement of a moving body when it returns back to its starting point.

....

7. To the speed of a body if it covers the same distance in half the time.

....

8. When rupturing sporangium in bread mound fungus.

....

9. To the distance between the image and the plane mirror when the body becomes closer to the mirror.

....

10. Reproductive cells are divided by meiosis.

....

11. The initial speed of a moving body is greater than the final speed.

....

12. The combination of the male gamete and female gamete.

....

13. If the starfish loses one of its arms containing a part of its central disc .

....

14. If the incident light ray falls parallel to the principal axis of concave mirror.

....

15. Focusing laser on the gold Nano-particles in the cells infected by cancer.

....

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16. A light ray is incident passing through the center of curvature of a concave mirror.

....

17. A light ray passes through the optical center of the lens.

....

18. Putting a yeast fungus in a warm sugary solution.

....

19. The nebula gradually lost its heat (from point of view of Laplace scientist).

....

20. The liver gets injured or apart of it is cut.

....

21. The parts of the inner chromatids are exchanged in the first prophase.

....

22. An object is put at the focus of a convex lens.

....

23. The starfish misses one of its arms and it contains a part of its central disk.

....

24. The centrosome disappears from the animal cell .

....

25. Reflection of a light ray falls on a concave mirror to pass with its focus.

....

26. A body is placed at a distance less than the focal length of a concave mirror.

....

27. The shortness of the diameter of the eyeball.

....

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✹(7) Define each of the following :

1. The scalar physical quantity.

....

....

2. The crossing over phenomenon.

....

....

3. The optical center of the lens.

....

....

4. The binary fission.

....

....

5. Contact lens.

....

....

6. Tetrad.

....

....

7. The focal length of a lens.

....

....

8. Zygote.

....

....

9. Fertilization.

....

....

10. Irregular speed.

....

....

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11. The radius of curvature of a mirror.

....

....

12. Reproduction by sporogony (spore propagation).

....

....

13. Average speed.

....

....

14. Angle of incidence.

....

....

15. Regular (uniform) speed.

....

....

16. The pole of the mirror.

....

....

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✸(8) Problems

1

An object moves in a straight line northward at a speed of 5 m/sec. and its speed reaches 20 m/sec through 3 seconds.

Calculate the following:

l. The velocity after 3 seconds.

2. The acceleration of the moving object.

....

....

....

2

Two race cars, the first car moves at a speed of 80 km/h, while the second car moves at a speed of 120 km/h, in the same direction. Mention the following :

1. The relative speed of the first car relative to an observer standing on one side of road.

2. The relative speed of the second car relative to passenger in the first car.

....

....

3

A car moved from rest and its speed became 25 m/s. during 10 seconds.

Calculate its acceleration.

....

....

....

4

The opposite figure represents one of meiotic division (meiosis) phases :

1 . What is the name of this phase ?

2. Draw the phase next to this phase.

....

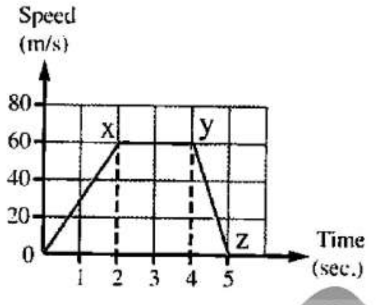
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....

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5

From the opposite graph which represents the motion of a ca



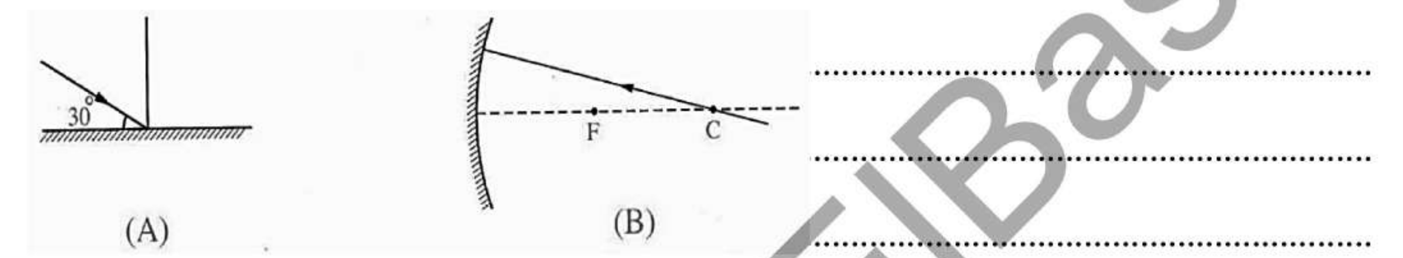
1. value of the maximum speed of the car equals .... m/s.

2. The kind of acceleration in part (yz) is ....

6

In the following two figures :

What is the value of the angle of reflection of the incident rays in figures (A) and (B)?



(A) (B)

....

....

....

7

The opposite figure shows a vital phenomenon :

1. What is the name of this phenomenon?

2. Mention the name of the phase in which this phenomenon occurs and mention the type of its division.

3. What is the importance of its occurrence ?

....

....

....

8

Write the assumptions of crossing star theory for the origin of the solar system **(4 assumptions only).**

....

....

....

....

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9

In the opposite figure, two eye lenses for two eyes equal in eye diameter for two different persons.

Which of them has short-sightedness and why ?

....

....

....

(A) (B)

10

Through your study the stages of mitotic division answer the following :

1. Name the phase that preceding this phase the figure.

2. In which phase the centromere of each chromosome is split lengthwise into two halves ?

3. In which phase the spindle fibers disappear ?

4. What the importance of interphase?

....

....

....

....

....

11

Explain by drawing :

The formed image by convex lens, when the body at a distance greater than double the focal length. Then write the properties of the formed image.

....

....

....

....

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12

Calculate the actual speed of the car whose relative speed is (80 km/h) relative to an observer moving in opposite direction at a speed of (30 km/h).

....

....

....

13

An object is placed at a distance of (8 cm) from a concave lens has a focal length (2 cm) :

1. Draw the direction of the ray that eye sees the image.

2. Mention the properties of image formed.

....

....

....

....

14

1. Copy the figure then draw the rays that form the image of the object.
2. The point (X) refers to ....

X

C F F C

15

A person moves in the path (a b c d e) as shown in figure, he covered a distance of 10 m. northward in 2 seconds, then he covers 30 m. eastward in 10 seconds. and followed by 40 m. southward in 8 seconds, finally 30 m. westward in 5 sec.

1. Calculate the displacement of the person from the start of motion to end.
2. In which part of the person motion, his speed was the least ?

b 30 c

10

a

40

e 30 d

....

....

....

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16

In the opposite figure , that represents the movement of an object from point (A) to point (C) passing by point (B), **Calculate the following :**

1. Speed.

2. Velocity.

....

....

....

17

The figure in front of you shows a phase of cell division. Answer the following :

1. What is the type of this division ?
2. What is the name of this phase ?
3. What is the importance of this type of division ?

....

....

....

18

A car moved from Banha to Cairo at a distance of 40 km in 30 minutes , then it returns back from Cairo to Banha in the same time. Calculate (in km/h) :

1. The car velocity from the beginning to the end of the journey.

2. The average speed of the car during the total time.

....

....

....

19

Mention the properties of the formed image in each of the following cases :

1. An object is placed in front of a convex mirror.

2. An object is placed in front of a convex lens at a distance less than its focal length .

3. An object placed at the focus of a convex lens.

....

....

....

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20

Look at the following figure, then answer the following :

(1) (2) (3) (4)

1. What is the kind of cell division in this figure ?
2. What is the name of phases number (2) and (3).
3. What will disappear in phase number (1).

....

....

....

21

When each of the following values equal "Zero" :

1. Reflecting angle of a light ray incident on a plane mirror.
2. The velocity of a moving object.
3. Reflecting angle for an incident ray falls on reflecting surface of a cancave mirror.

....

....

....

22

An object is placed at a distance of 30 cm from a concave mirror with a radius of curvature 40 cm.

1. Calculate the focal length of the mirror.
2. Show by drawing the path of rays that show the formed image in this case.

....

....

....

....

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23

Two cells are divided, one of them in the plant stem and the other in the plant ovary, if you know the number of chromosomes in each of them is 6 pairs of chromosomes, mention:

1. The kind of cell division in each cell.
2. The number of chromosomes in each resulted cell.

....

....

24

In the opposite figure :

1. Complete the path of the rays to form an image for the object.
2. Mention the properties of the formed image.

Object
C F F C

....

....

....

....

25

A person moves from point (A) to point (B), then changes his direction to point (C) through 10 seconds, Calculate :

1. The total distance covered by the person.
2. The displacement done by the person.
3. The velocity.

Zero 2m. 4m.
A C B

....

....

26

The opposite figure represents the crossing over phenomenon, Answer the following :

1. What happens in this phenomenon ?
2. What is the name of the phase in which this phenomenon occurs?
3. Draw the following phase to the phase in which this phenomenon occurs.

....

....

....

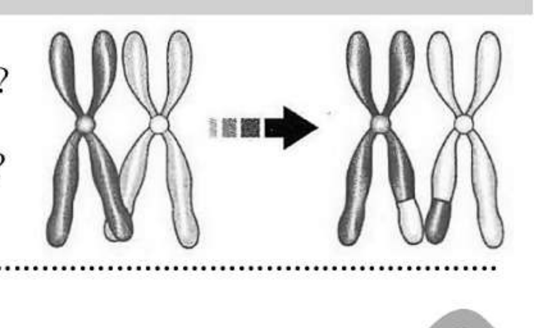
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27

The opposite figure :

1. What is the name of this phenomenon in front of you ?
2. What is the importance of its occurrence.
3. Mention name of phase that this phenomenon occurs ?



....

....

....

28

Draw the figure in your answer paper, then :

1. Complete the path of the incident rays on the mirror from the object.
2. Mention the characteristics of the formed image and its position.



....

29

The opposite figure represents one of the division phases:

1. What is the name of this phase and the type of division ?
2. What is the name of next phase that follow it.

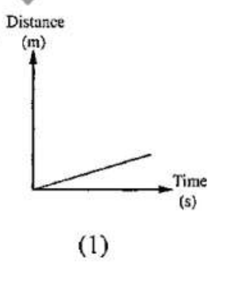


....

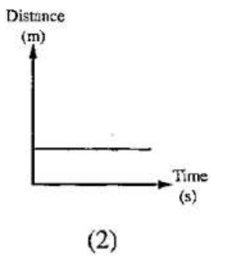
....

30

Describe the motion of the object in each of the following graph :



(1)



(2)

....

....

....

....

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31

A racer covered 50 meters northward within 30 seconds then 100 meters eastward within 60 seconds then 50 meters southward within 10 seconds, and then returns back to the start point within 40 seconds :

1. Calculate the total distance that the racer moved ?
2. What is the average speed of the racer?
3. Calculate the displacement ?

....

....

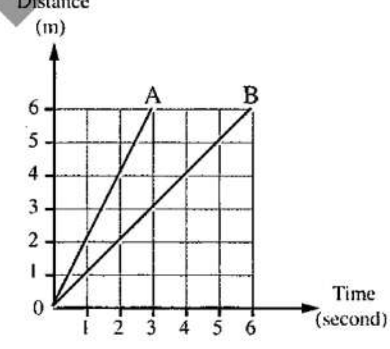
....

32

The opposite graph represents the (distance - time) graph for the movement of two objects A , B From the graph, answer the following :

1. What is the kind of speed of the two objects ?

2. Calculate the ratio between the speed of object A and the speed of object B



....

....

....

....

....

33

The opposite figure represents one of the important process to complete the reproduction. Answer the following :

1. What is the name of the process that number (3) refers to and what is the name of the produced cell ?

2. What is the importance of forming the cell number (3) ?

3. What is the kind of division in part (4)?

4. What is the number of chromosomes in the cell number (1)?

.... (1)

....

.... (3) (4)

.... (2)

....

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34

An object is placed at a distance of 5 cm from a convex lens its focal length is 3 cm. Show by drawing the position of the formed image and mention the properties of this image, **by drawing two light rays only.**

....

....

....

35

"A car starts movement from rest until its speed reaches 25 m/s after 10 seconds."

1. Calculate the value of acceleration.

2. What kind is the acceleration ?

....

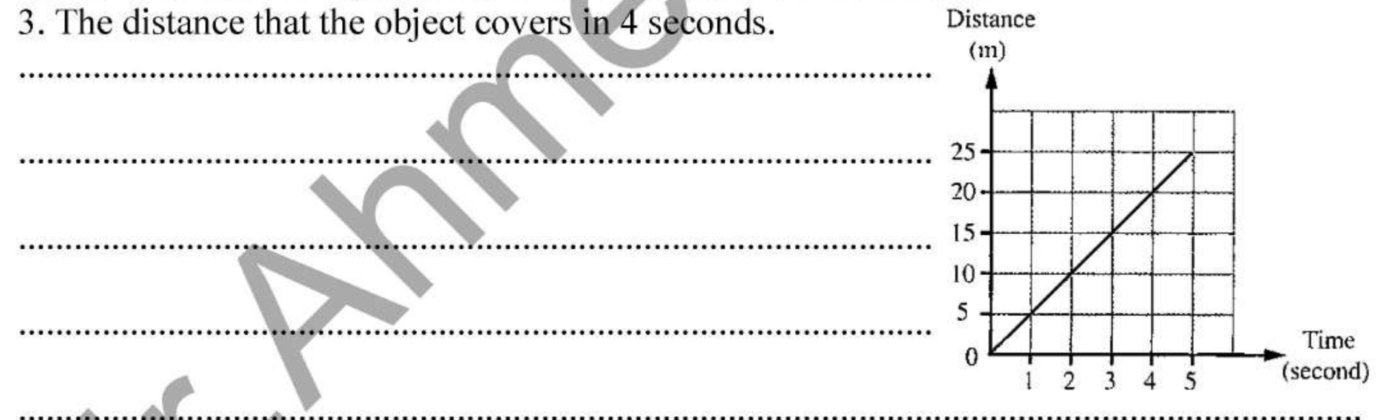
....

....

36

An object moves according to the graphical relation shown in the opposite figure, **calculate** :

1. The speed of the object's motion and mention its kind.
2. The time that the object takes to cover a distance of 15 meters.
3. The distance that the object covers in 4 seconds.



....

....

....

....

....

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Model answer

(1) Write the scientific term :

1. Speed
2. Fertilization
3. Universe
4. Uniform speed
5. Concave lens
6. Vegetative reproduction
7. Galaxy
8. Angle of reflection
9. Fertilization
10. Relative speed
11. Gravity (attraction force)
12. Reproductive cell
13. Motion
14. Optical center
15. Universe
16. Light reflection
17. Solar system
18. Long-sightedness
19. Average speed
20. Uniform acceleration
21. Reproduction process
22. Angle of incidence
23. DNA
24. Convex mirror
25. Velocity
26. Regeneration
27. Centromere
28. Secondary axis
29. Radius
30. Non-uniform speed
31. Relative speed
32. Concave mirror
33. Optical center
34. DNA
35. Light reflection
36. Principal axis of mirror
37. Nebula
38. Spherical mirror
39. Pole of mirror
40. Nucleus
41. Second law
42. Fertilization
43. Binary fission
44. Interphase
45. Big bang
46. Tumor
47. Contact lens
48. Cataract
49. Velocity
50. Chromosome
51. Spindle fiber
52. Virtual image
53. Crossing star theory
54. Nebula
55. Mitotic
56. Distance
57. Solar System
58. Principal axis
59. Interphase
60. Velocity
61. Centromere
62. Vegetative reproduction
63. Star explosion phenomenon
64. Relative speed
65. Average speed
66. Scalar quantity
67. Concave mirror
68. First law
69. Convex mirror
70. Principal axis of lens
71. Radius
72. Focus
73. Short-sightedness
74. Nebula
75. Sun
76. Laplace
77. Crossing star theory
78. Light year
79. Universe
80. Big bang
81. Big bang

(2) Choose the right answer:

1. A
2. B
3. B
4. B
5. C
6. C
7. D
8. D
9. C
10. B
11. D
12. D
13. C
14. B
15. C
16. B
17. C
18. B
19. D
20. D
21. B
22. B
23. D
24. D
25. B
26. B
27. A
28. B
29. D
30. A
31. A
32. D
33. C
34. B
35. A
36. D
37. C
38. D
39. C
40. A
41. C
42. B
43. B
44. D
45. D
46. D
47. C
48. A
49. A
50. C
51. D
52. C
53. C
54. B
55. B
56. D
57. C
58. A
59. C
60. C
61. A
62. B
63. C
64. A
65. B
66. C
67. B
68. B
69. A
70. C
71. C

(3) Complete the following :

1. Milky way
2. Somatic
3. Scalar – vector
4. Fred Hoyle
5. Speed
6. Focus
7. Gaseous
8. Convex
9. Mitosis
10. Laplace
11. Prophase
12. Galaxy
13. Vector – scalar
14. Spiral
15. Mitotic – meiotic
16. Center
17. Parallel to principal axis
18. Scalar
19. Mass – force
20. Spindle fiber
21. Inner chromatid
22. Testis - ovary
23. Long-sightedness – convex
24. Distance – time
25. Universe – solar system
26. Centrosome - cytoplasm
27. Milky way
28. Virtual
29. Prophase
30. Motion
31. Medical glasses – plastic
32. Converge – diverge
33. Milky way – edge of galaxy
34. Straight , curved
35. Nucleus – chromosome
36. Concave
37. Budding – regeneration
38. Fred Hoyle
39. gold
40. Concave
41. Protein
42. Centrosome – condensing of cytoplasm
43. Hydra
44. Pole of mirror
45. Velocity
46. m/s - m/s^2
47. Prophase I – first meiotic
48. Concave – convex
49. Milky way
50. Asexual
51. Contact lens
52. Focus
53. Opposite
54. Prophase I
55. Eight
56. Vector
57. 40
58. Convex – concave
59. Budding – binary fission
60. Real
61. Galaxy
62. m/s^2
63. budding
64. Convex
65. Displacement
66. Hubble
67. Prophase
68. Radius
69. Displacement
70. Vector – scalar
71. Distance – time
72. Straight
73. Distance
74. Zero
75. Motion
76. Parallel
77. Center of curvature – pole of mirror
78. Concave
79. Long-sightedness
80. Optical center
81. Pole of mirror
82. Light reflection
83. Chamberlain and moulton
84. 220 Million – milky way
85. Galaxy
86. Hydrogen and helium
87. Laplace

(4) Correct the underlined words:

1. Eight
2. Centromere
3. Itself
4. Hydrogen
5. Equal
6. Mushroom
7. Reproductive cell
8. Virtual and erect
9. 220
10. 20
11. Concave
12. 15000 million
13. Protein
14. 10
15. Prophase I
16. Fred Hoyle
17. Diverge
18. Nuclear
19. Binary fission
20. Convex lens
21. Binary fission
22. Less than focus
23. Condensing of cytoplasm
24. Metaphase
25. Cornea
26. Distance
27. 25
28. Interphase
29. Magnitude and direction
30. Center of curvature
31. Nebula
32. Relative speed
33. Centromere
34. Speedometer
35. Stars
36. Zero
37. Binary fission
38. Hydrogen and helium
39. Centrosome
40. Refract
41. Equal
42. Sexual
43. 220
44. zero
45. Laplace
46. Meiotic cell division
47. Budding
48. Refract
49. Binary fission
50. Center
51. Laterally inverted
52. Half
53. Displacement
54. Zygote
55. Cheetah
56. Protein
57. Velocity
58. Sun
59. Hydrogen
60. Metaphase I
61. Spiral
62. Real – inverted
63. Direction
64. 0.5
65. Average
66. Reflected ray
67. 20
68. Optical center
69. Equal to object
70. Virtual
71. 10
72. Sun

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✸(5) Give reason for:

1. Because they have magnitude and direction
2. Because focal length (f) $=1/2$ x radius of curvature (r)
3. Due to the movement of galaxies apart
4. Because it is a virtual image.
5. Because it is formed behind the mirror from the intersection of the extensions of the reflected light rays and it can't be received on a screen.
6. To prepare the cell for division through some important biological processes where the amount of genetic material duplicates.
7. Because the penetrating rays from a lens don't meet and pass through a parallel way at infinity.
8. Because vegetative reproduction depends on mitotic division, in which the produced cells contain a full copy of the genetic material of the parent cells.
9. because its revolving speed around itself increased.
10. Because its speed changes by passing time.
11. To form two identical groups of chromosomes at each pole of the cell.
12. Because the distance is directly proportional to the time when the object moves at a constant speed.
13. Because it occurs through one parental individual and through a mitotic division as the new individual gets a genetic copy identical to the parent.
14. Because the mirrors of the cars in front of the ambulance car, form a laterally inverted image for this word, and thus it appears laterally corrected to the drivers.
15. Because the concave lens diverges the rays corning from a far object, so the image is formed on the retina
16. To prepare the cell for division through some important biological processes where the amount of genetic material duplicates.
17. Because they have two circular surfaces, each surface has a center.
18. Because two identical cells are produced, each one is identical to the original cell.
19. Because they have magnitude and direction
20. Because its speed changes by passing time.
21. Because it contributes in genes exchanging between the two homologous chromosome's chromatids and distributing them randomly in the gametes.
22. Because the produced cells contain half the number of chromosomes of the original cell.
23. Because the direction of the wind affects the velocity of the plane and hence the time of the trip and the amount of the fuel consumed.
24. Because it is a virtual image.
25. Due .to light reflection.
26. Because mitosis division plays an important role in growth which the body of children needs, while meiosis division aims to the production of gametes in adults only.
27. Because the angle of incidence equals the angle of reflection equals zero.
28. Due to the following reasons : - Old age. - Illness. - Side effects of drugs. - Genetic readiness.
29. Due to the occurrence of the crossing over phenomenon during it.
30. Because vegetative reproduction depends on mitotic division, in which the produced cells contain a full copy of the genetic material of the parent cells.
31. To prepare the cell for division through some important biological processes where the amount of genetic material duplicates.
32. Due to the Sun gravity.
33. Because concave lens diverges the rays corning from a far object, so the image is formed on the retina.
34. Because the mirrors of the cars in front of the ambulance car, form a laterally inverted image for this word, and thus it appears laterally corrected to the drivers.
35. Due to the explosion in the expanded part of the Sun that faces the huge star.
36. Due to meiosis division (which reduce the number of chromosomes) in gametes, then the combination of male gamete (N) and female gamete (N) to form a zygote which contains the whole number (diploid number) of chromosomes (2N).
37. Due to the increase in the eyeball diameter.
38. Because its speed doesn't change by passing time (ΔV =Zero).
39. Because they have magnitude only and have no direction
40. Because speed = d/t so, speed is inversely proportional to the time.

Mr.Ahmed ElBasha

✹(6) What happen if:

1. The spindle fibers are not formed therefore the cell division doesn't completed.
2. It passes through the lens without refraction.
3. This causes long-sightedness
4. The star attracted the Sun to it which led to a great expansion in the part of the Sun facing it.
5. The remaining cells undergo many mitotic divisions to compensate the missing part.
6. The displacement equal zero
7. It will increase to double
8. A large number of spores are released.
9. The image will move close to the mirror
10. They will produce the gametes that contain the half number of chromosomes.
11. The body speed decreases by passing time and the movement is described as a decelerating motion.
12. A zygote is produced which when it grows, it gives a new offspring with traits of its parents
13. This part grows forming a new individual
14. It reflects passing through the focus.
15. the nano-molecules of gold which stuck the surface of cancerous cell absorb the light of laser and convert it into heat which leads to burn and kill the infected cell.
16. It reflects on itself.
17. It passes through the lens without refraction.
18. The yeast fungus reproduces asexually by budding forming a new fungus separated from the parent cell or it remains connected to the parent cell forming a colony.
19. Its size contracted and its revolving speed around itself increased
20. The remaining cells undergo many mitotic divisions to compensate the missing part
21. Crossing over phenomenon occurs.
22. No image is formed.
23. The starfish compensates its lost arm and the arm forms new individual if it contains a part of the central disc.
24. The spindle fibers are not formed therefore the cell division doesn't completed.
25. It will reflection parallel to principle axis
26. A virtual , erect and magnified image is formed behind the mirror
27. This causes the shortness of the radius of the eye sphere, thus the retina is close to the eye lens and this causes long-sightedness

Mr.Ahmed ElBasha

✹(7) Define each of the following :

1. It is the physical quantity that has magnitude only and has no direction.
2. It is a phenomenon that takes place at the end of prophase I and, in which some parts of the two inner chromatids of each tetrad are exchanged to produce new genetic arrangements.
3. It is a point inside the lens that lies on the principal axis in the mid distance between its faces.
4. It is a type of asexual reproduction where the nucleus divides mitotically, then the cell splits into two identical cells
5. They are very thin lenses made of plastic and can stick to the eye cornea by the eye fluid
6. They are the arrangement of homologous pairs of chromosomes where each pair consists of 4 chromatids.
7. It is the distance between the principal focus and optical center of the lens.
8. It is a cell produced due to fertilization and it contains the complete number of chromosomes of the living organism
9. It is the combination of a male gamete (N) and a female gamete (N) to form a zygote (2N).
10. It is the speed by which the object moves when it covers equal distances at unequal periods of time.
11. It is the radius of the sphere that the mirror is a part of it.
12. It is a type of asexual reproduction that occurs in some fungi and algae by producing spores.
13. It is the regular speed by which the object moves to cover the same distance at the same period of time.
14. It is the angle between the incident light ray and the normal.
15. It is the speed by which the object moves when it covers equal distances at equal periods of time (whether the distance and time are short).
16. It is the point that lies in the middle of the reflecting surface of the mirror.

Mr.Ahmed ElBasha

✸(8) Problems

1

1. The velocity after 3 sec is 20 m/s northward direction.
2. Acceleration (a)
$$= \frac{\text{Final speed } (V_2) - \text{Initial speed } (V_2)}{\text{Time at which change occurs } (\Delta t)}$$
$$a = \frac{20-5}{3} = \frac{15}{3} = 5 \text{ m/s}^2$$

2

1. The relative speed of the first car relative to an observer standing on one side of the race road = 80 km/h.
2. The relative speed of the second car relative to passenger in the first car = 120 – 80 = 40 km/h.

3

$$\text{Acceleration (a)} = \frac{\Delta V}{\Delta t} = \frac{V_2 - V_1}{\Delta t} = \frac{25-0}{10} = 2.5 \text{ m/s}^2$$

4

1. Metaphase I
2. Anaphase I

Ananphase I

5

1. 60
2. negative acceleration (Decelerating motion).

6

(A) The angle of reflection = 60°

(B) The angle of reflection = zero

7

1. Crossing over phenomenon.
2. – This phenomenon occurs at the end of prophase I.
   – The type of the division is meiotic division.
3. Its importance :
   It works on the variation of genetic traits among the members of the same species, where it contributes in genes exchanging between the two homologous chromosome's chromatids and distributing them randomly in the gametes.

8

- **Assumptions of the crossing star theory :**
  It assumed that the origin of the solar system was the Sun.

1. Another huge star (crossing star) approached to the Sun.
2. This star attracted the Sun to it which led to a great expansion in the part of the Sun facing this star.
3. **The expanded part from the Sun was exploded which led to :**
   - The Sun escaped from the gravity of that star.
   - A gaseous line was formed of a great length from the Sun to the last planets.
4. The gaseous line started to condense due to the attraction force, then it cooled forming the planets.

9

– The person who has the eye lens (A) suffers from short-sightedness.

– As the convexity of this lens face is large, so the focus nearer to the optical centre which lead to form a shorter focal length for the eye lens, so an unclear image is formed in front of the retina.

10

1. prophase.
2. Anaphase.
3. Telophase.
4. The cell prepare itself for division.

11

The properties of the formed image :

– real, inverted and diminished.

Mr.Ahmed ElBasha

12

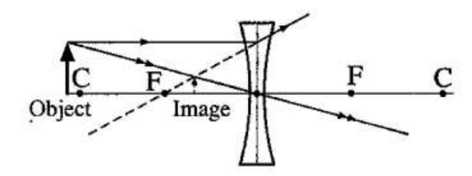
Actual speed = relative speed – observer's speed.

$= 80 - 30$

$= 50$ km/h

13

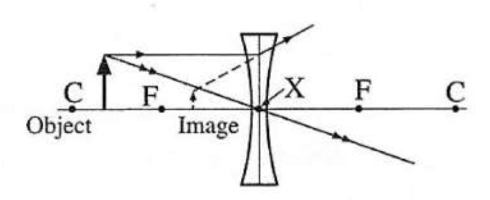
1.



2. The properties of the formed image : virtual, erect and diminished.

14

1.



2. The optical centre

15

1. The displacement = 40 – 10 = 30 m. To the south.
2. $V_{(ab)} = \frac{10}{2} = 5$ m/sec.

   $V_{(bc)} = \frac{30}{10} = 3$ m/sec.

   $V_{(cd)} = \frac{40}{8} = 5$ m/sec.

   $V_{(de)} = \frac{30}{5} = 6$ m/sec.

∴ The person moves with the least possible speed in the part (bc).

16

1. Distance = AB + BC = 60 + (60 – 20) = 100 m

   speed $= \frac{d}{t} = \frac{100}{10} = 10$ m/sec.
2. Velocity $= \frac{\text{displacement}}{\text{time}} = \frac{20}{10} = 2$ m/sec.

17

1. Mitosis.
2. Metaphase.
3. – The growth of living organism.
   – The compensation of the damaged cells.

18

1. Velocity $= \frac{\text{displacement}}{\text{time}} = \frac{\text{zero}}{1} = \text{zero}$
2. Average speed $= \frac{\text{total distance}}{\text{total time}}$

   $= \frac{80}{1} = 80$ km/h.

19

1. Virtual, erect and diminished image always formed.
2. Virtual, erect and magnified image is formed at the same side of the object.
3. No image is formed.

20

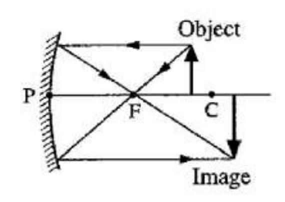
1. Mitotic division.
2. Metaphase – anaphase.
3. Nucleolus and nuclear membrane

21

1. When the incident light ray falls prependicular on the reflecting surface,
   Incident angle = Reflecting angle = zero.
2. When the moving object returns back to the same starting point,
   The displacement = zero, and so velocity = zero.
3. When the incident light ray falls passing through the centre of curvature of a concave mirror,
   Incident angle = Reflecting angle = zero

22

1. Focal length $= \frac{r}{2} = \frac{40}{2} = 20$ cm
2.

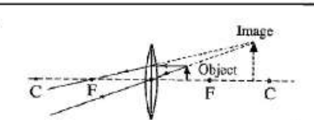


23

1. In the plant stem cell: mitosis
   In the ovary cell : meiosis.
2. The resulted cell from mitosis : 6 pairs
   The resulted cell from meiosis : 3 pairs.

24

1.



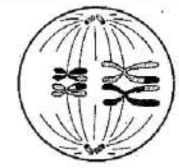
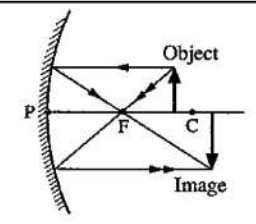
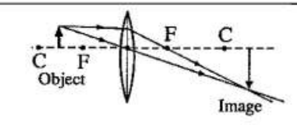
2. The properties of the formed image
   Virtual, upright and magnified.

25

1. The total distance $= \overline{AB} + \overline{BC} = 4 + 1 = 5$ m
2. Displacement $= \overline{AB} - \overline{BC} = 4 - 1 = 3$ m in the direction of east
3. The velocity $= \frac{\text{displacement}}{\text{time}} = \frac{3}{10}$

   $= 0.3$ m/sec. in the direction of east

Mr.Ahmed ElBasha

No.	Answer
26	1. Some parts of the two inner chromatids of each tetrad are exchanged to produce new genetic arrangment. 2. Prophase 1 (at its end). 3. The drawing of metaphase 1  Metaphase I
27	1. Crossing over phenomenon. 2. It works on the variation of the genetic traits among the members of the same species. 3. Prophase 1 (at its end).
28	1.  2. The properties of the formed image, and its position : Real – inverted – magnified, at a distance greater than radius of curvature (double focal length).
29	1. Metaphase 1 – First meiotic division. 2. Anaphase 1.
30	1. The object moving with uniform speed. 2. The object is at rest.
31	1. Total distance = 50 + 100 + 50 + 100 = 300 m 2. Average speed = $\frac{\text{total distance}}{\text{total time}} = \frac{300}{140}$ = 2.14 m/sec 3. Displacement = zero.
32	1. Both objects move with a regular speed. 2. V (of object A) = $\frac{4}{2} = \frac{2}{1}$ = 2 m/sec. V (of object B) = $\frac{4}{4} = \frac{2}{2}$ = 1 m/sec. V (A) : V (B) = 2 : 1
33	1. Fertilization – zygote. 2. The zygote contains the whole number of chromosomes which present in its species, and also its genetic trait comes from two sources (male gamete and female gamete). 3. Mitosis division. 4. (N).
34	The properties of the formed image : real, inverted and magnified. 
35	1. $a = \frac{V_2 - V_1}{t} = \frac{25 - \text{zero}}{10} = 2.5 \text{ m/sec}^2$ 2. It is a positive acceleration.
36	1. $V = \frac{5}{1} = \frac{10}{2} = \frac{15}{3} = \frac{20}{4} = 5$ m/sec. It's kind is a regular speed. 2. 3 seconds 3. 20 meters

Mr.Ahmed ElBasha



كيفية طباعة صفحات معينة من ملف معين



مثلا ازاى نطبع الصفحات من صفحة 4 الى صفحة 9

خطوة 1

File > Print... Ctrl+P

خطوة 2
اختيار اسم الطابعة بتاعتك

خطوة 3
كتابة الصفحات المراد طباعتها
نكتب رقم 4 ثم نكتب الشرطة دي - ثم نكتب 9

Pages to Print: Pages 4 - 9

خطوة 4
اختيار نوع الورق

Page Setup...

خطوة 5
اختيار A4

Paper Size: A4

خطوة 6

Print

حمل الآن

مجانا وحصريا

المراجعة رقم (2)







Q1:- Complete the following:-

1 - …………………………..and… .... are the two basic factors necessary to describe the motion .

2 – The result of multiplying a speed of a moving object by time = ……………..

3 – The measuring of relative speed depends on the …………………

4-A red car moves on a road at speed 80 km/h and a yellow car moves in the same direction at speed 70 km/h , so the passenger in yellow car observes the red car moves with a speed equals……………………..

5 – The (speed – time) graph for motion at uniform speed is represented by a ……………… line parallel to the................. axis.

6 – The measuring unit of speed is ………..,while the measuring unit of acceleration is……………………

7 – When an object moves with accelerating motion , this means that its .... speed is more than its.................speed.

8 – The distance that is covered by a moving body in a unit time is known as ………,while .... is the distance covered in certain direction.

9-The rate of changing speed is…………………..

10- The graph for regular acceleration is represented by…………..on the vertical axis and…............................. on a horizontal axis.

11- ……………………,..................... and acceleration are examples on vector physical quantities.

12- When an object moves from point (A) to point(B) in a direct straight line to cover a distance 60 m in 5 sec, so the object speed equals.............................. , while its average velocity equals…………………

13– The ………… mirror forms virtual erect and enlarged image while.............mirror forms virtual erect smaller image.

14 – The phenomenon of the light bouncing off in the same medium when it meets the reflecting surface is called………………..

15 – The center of mirror curvature in concave mirror lies .... the reflecting surface ,while it lies in convex mirror............the reflecting surface.

16 – The radius of the concave mirror equals........................of its focal length.

17 – When a body lies in front of a concave mirror at a distance ………………of its double focal length a real ,smaller and........... image is formed.

18- When a light ray falls on a reflecting surface, the angle between the incident ray and the reflecting surface is 35^0, so the angle of reflection equals……….
and the angle between incident light ray and reflected light ray equals…………

19- If the angle between the reflected ray and incident ray is 140^0 so the angle of incidence equals…………………

20- Aperson stands in front of a plane mirror at a distance 3 meters:

- The distance between the person and his image =… ....meters
- If the mirror moves a distance of one meter in the direction of the person so the distance of the image and his first image is..................meter(s)

21- The incident light ray that passes through the center of curvature of a spherical mirror reflects............................ , while the light ray which passes through its focus reflects………………..

22- To obtain a real inverted and magnified image for a body we must put in frontof a concave mirror at distance less than……………and greater than…………

23- If a body is put in front of a concave mirror at a distance of 20 cm and its image formed at 20 cm in front of the mirror so the focal length of this mirror is............................cm.

24- The incident light ray that passes through the optical center of the conves lens, it exists the lens………………..

25- An object with 6 cm height is placed at a distance 10 cm from a convex lens its focal length is 5 cm therefore the height of the formed image is…………….

26- It is impossible to obtain real image by using…………lens and ....mirror.

27- ………………..and… ....are reasons for cataract.

28- If the speedometer of a moving car points to 90 km/h , therefore after two

hours the car covers...m

29- The object moves with uniform acceleration so its acceleration is………….

30- The ratio between the final speed and initial speed of an object moves at accelerating motion is..................... than one.

31- The plane which flies against the wind direction consume more… ....and take long.................... than the plane that flies in the same direction of wind

32- If the light ray falls perpendicular to the plane mirror it reflects………..

33- If an object is put in front of plane mirror so the ratio between the length of the image and the length of object is……………….

34- The roman used....................... mirror to burn sails of enemies ships by using sun rays.

35- If the body is at distance less than the focal length of a concave mirror its image will be………………., magnified and…………………

36- Force is considered as ....physical quantity, while mass is considered as ....physical quantity.

37. The movement path may be ....or combination of both

Q2: Mention the type of the optical piece which form the following images

1 – virtual – erect – equal…………………………..

2 – virtual - erect- enlarged. ………………………

3 – virtual – erect – smaller…………………………

4- Real – inverted – magnified……………………..

Q3 : Problems

1 – A bus covers a distance of 120 km with a speed 90 km/h, then it covers 105 km at 70 km/g. Calculate the time needed to cover the whole distance.

……………………………………………………………………………………………
………………………………………………………………………………

2-A moving car covers a distance 20 m through 4 seconds, then it covers 40 m through 11 sec. calculate the average speed of a car.

……………………………………………………………………………………………

3-A boy rode a bike and covers 90 km at an average speed=36km/h but he covered the first thirty km in two hours. What is the average speed at which the remaining distance was covered?

……………………………………………………………………………………………
………………………………………………………………………………

4-Car (A) moves with speed 60 km/h and car (B) moves in the same direction at speed 90 km/h. Find the relative speed of car(B) relative to an observer:

a)Stands on the ground.

………………………………………………………………………………………

b)In car (A).

……………………………………………………………………………………

5-An object moves from rest and its speed reaches 20 m/sec in 5 sec.

a) Calculate the acceleration of the moving object.

……………………………………………………………………………………..

b)What is the type of it?

………………………………………………………………………………………

6-A car moves at speed 72 km/h, the driver uses the brakes, the car stops after 8 seconds, calculate the acceleration at which the car moves.

……………………………………………………………………………………………………
………………………………………………………………………………

7-A car moves at a speed of 60 m/sec. If the driver used the brakes to decrease the speed so it decreases by 3 m/sec^2. Calculate its speed after 10 seconds from using the brakes.

……………………………………………………………………………………………………
………………………………………………………………………………

8- Calculate the time required for moving an object at acceleration 4 m/sec^2. Knowing that the change in the speed equals 28 m/sec.

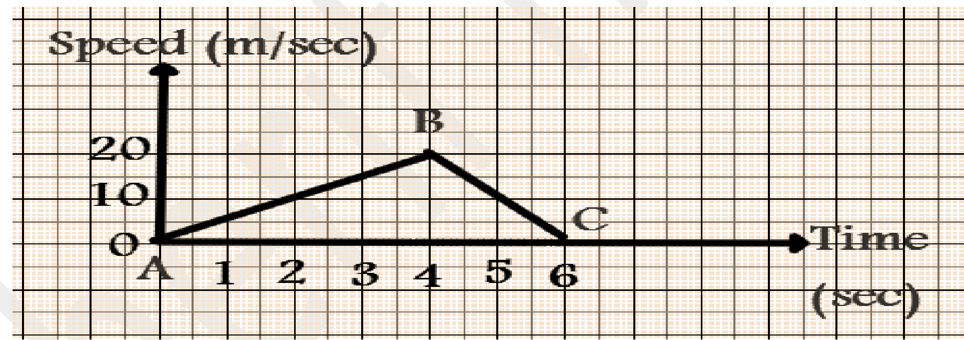
……………………………………………………………………………………………………
………………………………………………………………………………

9- The opposite graph shows a car moves in a straight line through two intervals of time(AB),(BC)

a) Calculate the acceleration for (AB), (BC)

……………………………………………………………………………………………………
………………………………………………………………………………

b)mention the kind of acceleration

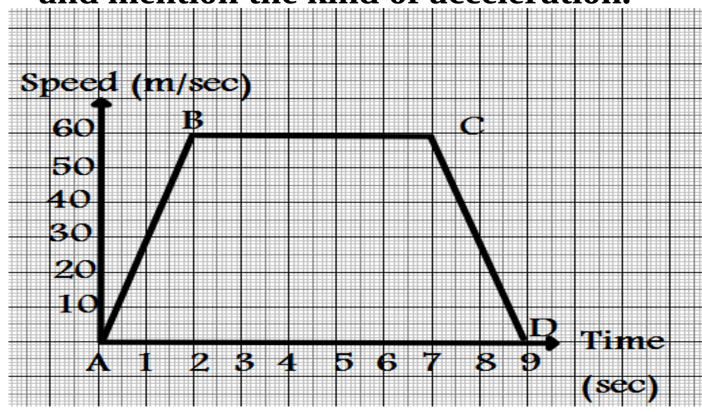


10- Look at the opposite diagram which represents the motion of a train from (A B → C → D), then answer:

a) Mention the kind of motion in part (BC)

…………………………………………………………………………………………

b) Calculate the acceleration at which the train moves at the last 2 seconds (part CD), and mention the kind of acceleration.





11 – If you know that the circumference of the circle = $2\pi r$ (where $\pi = 22/7$, r = radius) in the opposite figure , a body moves in a circular path its radius = 7m from point (A) to (B) within 3.5 sec. ,calculate :

a. Total distance…………………………………………
b. total displacement…………………………………….
c. the velocity……………………………………………

A B

12-A body moves from point (a) to point (b), then changes its direction to point (c)Calculate

zero 1m 2m 3m 4m
a c b

a)Total distance which the body moved.

……………………………………………………………………………………
b)Displacement done by the body.
……………………………………………………………………………………

13-The opposite figure represents a car starts its motion from point(A) to point(F) passing by points B,C,D,E. Calculate

B 200 m C
40m
E D
160m
80m
40m
A F

a) Total distance covered by the car

…………………………………………………

b) Displacement done by the car

…………………………………………..................

c)velocity if you know that the total time spent by the car equals 10 seconds.

……………………………………………………………………………………

14-An object is put at a distance of 20 cm from a mirror. The image is formed on a screen and has a length equal to the object.

A) What is the type of mirror?

…………………………………………………………………………………

B) Calculate the focal length of the mirror?

…………………………………………………………………………………..

C)Draw the path of rays that shows the formation of this image.
……………………………………………………………………………………
……………………………………………………………………………………
………………………………………………………....

SCIENCE

sherif hawai

15-A body of length 1 cm is put at a distance of 4 cm from a concave mirror, its focal length 2 cm.

A) Draw a diagram to show the path of rays at which the eye can see the image of the body.

……………………………………………………………………………………………………

…………………………………………………………………………..

B) Mention the properties of the formed image.

……………………………………………………………………………………

16-A person stands in front of a plane mirror at a distance of 10 meters. What is the distance he must move so that the distance between him and his image becomes 6 meters?

……………………………………………………………………………………..

17-An object is placed at a distance 20 cm from a spherical mirror with a radius of curvature 20 cm and when the mirror is displaced 5 cm toward the object, an image is formed on a screen.

a)Mention the type of mirror.

……………………………………………………………………………………..

b)Determine the position of formed image.

……………………………………………………………………………………..

c)Write the properties of the formed image.

………………………………………………………………………………………

d)Show by drawing the path of rays.

………………………………………………………………………………………

……………………………………………………………………………………

<u>18-Complete:</u>

The opposite figure and trace the incident light ray on two mirrors (Y) and(X)

Y mirror

45°

X mirror

19- The opposite Figures shows two plane ,Mirror (A) and (B). If a light ray falls on the mirror (A) and reflects in the mirror (B) as in figure. Calculate each of the following:

1)The angle of incidence of light ray on a mirror (A).

……………………………………………………………

30°

(B)

30°

(A)

2)The angle of reflection of the light ray from the mirror (B).

……………………………………………………………

3)The angle between the two mirrors.

……………………………………………………………

Sherif hawary

20- Noha stands at a distance of 3.5 m from a plane mirror and there is a barrier behind her at a distance of 1 m

-What is the distance between Noha and the image of the barrier in the mirror.

……………………………………………………………………………………….

21) Complete the path of these rays:

F C

F C

F C

F C

Q4: Give reasons for:

1 – The motion of the train is motion in one direction .

……………………………………………………………………………………….

2 – It is hard to measure regular speed for a car practically.

……………………………………………………………………………………….

3- The body moves with acceleration can't move at regular speed.

……………………………………………………………………………………….

4 – Distance is a scalar quantity , while displacement is a vector quantity.

……………………………………………………………………………………….

5- It is hard to measure the regular speed of a car practically.

……………………………………………………………………………………….

6- A moving car seems to be at rest relative to the rider of another moving car beside it with the same speed and direction.

……………………………………………………………………………………….

7- Physicists use mathematical relations like graphs and tables in many physical phenomena.

……………………………………………………………………………………….

8- The body which moves at acceleration can't move at regular speed.

……………………………………………………………………………………….

9- An acceleration is a vector physical quantity.

……………………………………………………………………………………….

10- Pilots take in consideration the velocity of the wind.

……………………………………………………………………………………….

11- Concave lens has virtual focus.

……………………………………………………………………………………….

12- Long – sighted person cannot see the close objects clearly.

……………………………………………………………………………………….

I Science

Q5 :What is meant by each of the following :

1- A moving car covers a distance of 100 km in two hours.

……………………………………………………………………………….………

2- The relative speed of a train = 90 km/h.

……………………………………………………………………………….………

3- The change in the object speed per a unit time equals 100 m/sec^2.

……………………………………………………………………………….………

4- A body moves at acceleration (decelerating motion) = -2 m/sec^2.

……………………………………………………………………………….………

5- A body moves 60 meters and the value of the displacement = zero.

……………………………………………………………………………….………

6- The displacement of a moving body changes by 2 meters every second in a certain direction.

……………………………………………………………………………….………

Q6

1) Show by drawing only the path of rays which for an image of an object in front of concave mirror at a distance 10 cm if its focal length is 4 cm.

…………………………………………………………………………………………………
……………………………………………………………………

2) Show by drawing only the path of rays which for an image of an object in front of concave mirror at a distance less than focal length.

…………………………………………………………………………………………………
……………………………………………………………………

3) Show by a labeled diagram only the properties of formed image by a convex mirror.

…………………………………………………………………………………………………
……………………………………………………………………

Q7- Mention what happen in each of the following cases.

1) A light ray falls on a concave mirror passing by its center of curvature.

……………………………………………………………………………………

2) Falling of a light ray parallel to the principle axis on a convex mirror.

……………………………………………………………………………………

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Q8- Variant questions:

1- **An object is placed at a distance of 30 cm from the convex lens, its focal length 25 cm, show by drawing the path of the rays and the properties of the image formed.**

……………………………………………………………………………………………

………………………………………………………………………

2- **Two friends Ahmed and Ali were reading at the school library. Ahmed noticed that his friend was reading the only books which are far from his eyes**

(1) What's wrong with Ali?

……………………………………………………………………………………………

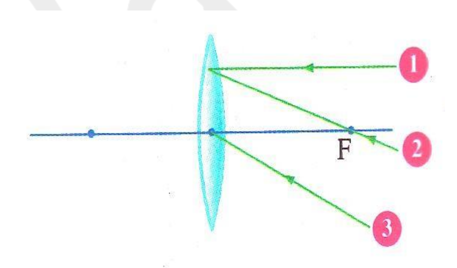
………………………………………………………………………

(2) How can he solve his problem?

……………………………………………………………………………………………

………………………………………………………………………

Q9- In the opposite figure:



(I) Which of the rays 1, 2 or 3 can pass :



(1) Without refraction ? Why ?

(2) Through the focus ? Why ?



(II) From the opposite figures compare between the two lenses according to the focal length.

Thin lens Thick lens

(III) Look at the opposite figure that represents two glass pieces, and then explain how you can arrange them to form.

(1) Diverging lens
(2) Converging lens

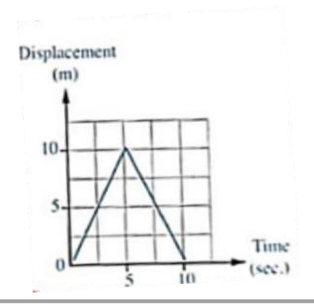


(IIII)-What is the name of each living organism and mention the type of asexual reproduction in each :





(IIIII)-From the opposite figure calculate :



1. Total distance.

2. Displacement

3. Velocity after the first five seconds.

V- Study the following figure which explains the steps of one of the biological phenomenon, then answer the following questions :

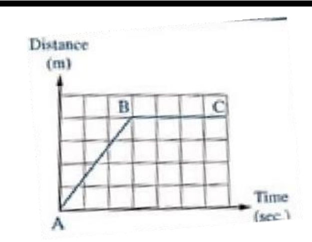
what's the name of this phenomenon ?

-Mention the phase in which that phenomenon occurs.

-What is the type of its division ?

- What are the are the results which are produced if that phenomenon did not happen?.

(IIIII)- From the following figures answer the questions:

Figure (1)	Figure (2)
 1. Determine the intervals during which the body moves at uniform speed. 2. The time intervals during which . the body at rest.	- The opposite figure : Represents a phase of division of a reproductive cell. 1. Mention the name of this phase. 2. What is the type of cellular division it belongs to ? 3. Mention the importance of this type of division. 

VI- The opposite graph represents the movement of a body from point (A) to point (C) passing by point (B)

Calculate the following:

1. Speed

2. Velocity

IIIII-in the opposite figure :

An object is moving from point (C) to point (M) passing By two points (D, F) in (5 sec.), calculate :

1. The covered distance **2. The velocity.**

(VII) **Look at the opposite figure then answer :**



1. To which type of cell division it belongs ?

2. What is the name of this phase ?

3. What happens in this phase ?

From the opposite figure :



1. Write the name of this phase ?

2. When does this phase happen ?

3. Why does the cell passes through this phase ?

(VI) **In the opposite figure :**

If the angle between the incident ray and the surface of the plane equals 130°, Then the angle of reflection

equals to ....

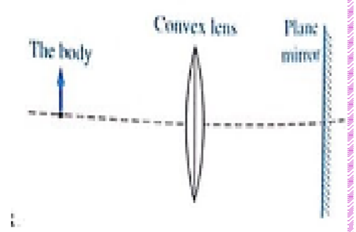


a. 40° **b. 50°** **C. 90^0** **d. 130°**

An object placed in front of a convex lens

The body and placed a plane mirror in front of them.

When you look inside the mirror you find that there is no image formed.



1. Determine the location of the body relative to the lens.

2. Why didn't the body image formed inside the plane mirror ?

-Mention the name of the phase that indicates the following changes during the cell division :

1. Spindle fibers begin to shrink, so two identical groups of chromatids are formed.

………………………………………………………………………………………

2. At the end of this phase, the nucleolus and nuclear membrane disappear.

………………………………………………………………………………………

3. It occurs when a complete set of chromosomes that have the same number of the mother cells chromosomes, is formed.

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………………………………………………………………………………………

Q1: Complete the following:

1. **Speed and direction are the two basic factors necessary to describe the motion.**
2. **The result of multiplying a speed of a moving object by time = distance.**
3. **The measuring of relative speed depends on the reference point.**
4. **A red car moves on a road at speed 80 km/h and a yellow car moves in the same direction at speed 70 km/h, so the passenger in the yellow car observes the red car moves with a speed equals 10 km/h.**
5. **The (speed – time) graph for motion at uniform speed is represented by a straight line parallel to the time axis.**
6. **The measuring unit of speed is m/s, while the measuring unit of acceleration is m/s^2.**
7. **When an object moves with accelerating motion, this means that its speed is increasing.**
8. **The distance that is covered by a moving body in a unit time is known as speed, while velocity is the distance covered in a certain direction.**
9. **The rate of changing speed is acceleration.**
10. **The graph for regular acceleration is represented by speed on the vertical axis and time on a horizontal axis.**
11. **Velocity, displacement, and acceleration are examples of vector physical quantities.**
12. **When an object moves from point (A) to point (B) in a direct straight line to cover a distance of 60 m in 5 sec, so the object speed equals 12 m/s, while its average velocity equals 12 m/s.**
13. **The concave mirror forms a virtual erect and enlarged image while the convex mirror forms a virtual erect smaller image.**
14. **The phenomenon of the light bouncing off in the same medium when it meets the reflecting surface is called reflection.**
15. **The center of mirror curvature in a concave mirror lies in front of the reflecting surface, while it lies behind the reflecting surface in a convex mirror.**
16. **The radius of the concave mirror equals twice its focal length.**
17. **When a body lies in front of a concave mirror at a distance greater than its double focal length, a real, smaller, and inverted image is formed.**
18. **When a light ray falls on a reflecting surface, the angle between the incident ray and the reflecting surface is 35°, so the angle of reflection equals 35°, and the angle between the incident light ray and reflected light ray equals 70°.**
19. **If the angle between the reflected ray and incident ray is 140°, so the angle of incidence equals 70°.**
20. **A person stands in front of a plane mirror at a distance of 3 meters: The distance between the person and his image = 6 meters.**
21. **If the mirror moves a distance of one meter in the direction of the person, so the distance of the image and his first image is 2 meters.**
22. **The incident light ray that passes through the center of curvature of a spherical mirror reflects back along the same path, while the light ray which passes through its focus reflects parallel to the principal axis.**
23. **To obtain a real inverted and magnified image for a body, we must put it in front of a concave mirror at a distance less than the focal length and greater than the radius of curvature.**
24. **If a body is put in front of a concave mirror at a distance of 20 cm and its image is formed at 20 cm in front of the mirror, so the focal length of this mirror is 10 cm.**
25. **The incident light ray that passes through the optical center of the convex lens exits the lens without deviation.**
26. **An object with a height of 6 cm is placed at a distance of 10 cm from a convex lens with a focal length of 5 cm; therefore, the height of the formed image is 12 cm.**
27. **It is impossible to obtain a real image by using a concave lens and convex mirror.**
28. **Aging and diabetes are reasons for cataract.**
29. **If the speedometer of a moving car points to 90 km/h, therefore after two hours the car covers 180 km.**
30. **The object moves with uniform acceleration, so its acceleration is constant.**
31. **The ratio between the final speed and initial speed of an object moving at accelerating motion is greater than one.**
32. **The plane which flies against the wind direction consumes more fuel and takes longer than the plane that flies in the same direction of the wind.**
33. **If the light ray falls perpendicular to the plane mirror, it reflects back along the same path.**
34. **If an object is put in front of a plane mirror, so the ratio between the length of the image and the length of the object is 1:1.**
35. **The Romans used concave mirrors to burn sails of enemy ships by using sun rays.**
36. **If the body is at a distance less than the focal length of a concave mirror, its image will be virtual, magnified, and erect.**
37. **Force is considered a vector physical quantity, while mass is considered a scalar physical quantity.**

Q2: Mention the type of the optical piece which forms the following images:

1. **Virtual – erect – equal: Plane mirror**
2. **Virtual – erect – enlarged: Concave mirror**

3. **Virtual – erect – smaller: Convex mirror**

Q3: Problems

1. **A bus covers a distance of 120 km with a speed of 90 km/h, then it covers 105 km at 70 km/h. Calculate the time needed to cover the whole distance.**
    - **Time for the first part: (\frac{120 \text{ km}}{90 \text{ km/h}} = 1.33 \text{ hours})**
    - **Time for the second part: (\frac{105 \text{ km}}{70 \text{ km/h}} = 1.5 \text{ hours})**
    - **Total time: (1.33 + 1.5 = 2.83 \text{ hours})**
2. **A moving car covers a distance of 20 m in 4 seconds, then it covers 40 m in 11 seconds. Calculate the average speed of the car.**
    - **Total distance: (20 \text{ m} + 40 \text{ m} = 60 \text{ m})**
    - **Total time: (4 \text{ s} + 11 \text{ s} = 15 \text{ s})**
    - **Average speed: (\frac{60 \text{ m}}{15 \text{ s}} = 4 \text{ m/s})**
3. **A boy rode a bike and covered 90 km at an average speed of 36 km/h but he covered the first 30 km in two hours. What is the average speed at which the remaining distance was covered?**
    - **Time for the first part: 2 hours**
    - **Distance for the first part: 30 km**
    - **Remaining distance: (90 \text{ km} - 30 \text{ km} = 60 \text{ km})**
    - **Time for the remaining distance: (\frac{60 \text{ km}}{36 \text{ km/h}} = 1.67 \text{ hours})**
    - **Total time: (2 + 1.67 = 3.67 \text{ hours})**
    - **Average speed for the remaining distance: (\frac{60 \text{ km}}{1.67 \text{ hours}} = 36 \text{ km/h})**
4. **Car (A) moves with a speed of 60 km/h and car (B) moves in the same direction at a speed of 90 km/h. Find the relative speed of car (B) relative to an observer:**
    - **a) Stands on the ground: (90 \text{ km/h})**
    - **b) In car (A): (90 \text{ km/h} - 60 \text{ km/h} = 30 \text{ km/h})**
5. **An object moves from rest and its speed reaches 20 m/sec in 5 sec.**
    - **a) Calculate the acceleration of the moving object.**
        - **Acceleration: 4 { m/s}^2)**
    - **b) What is the type of it?**
        - **Uniform acceleration**
6. **A car moves at a speed of 72 km/h, the driver uses the brakes, and the car stops after 8 seconds. Calculate the acceleration at which the car moves.**
    - **Initial speed: 72 km/h = 20 m/s**
    - **Final speed: 0 m/s**
    - **Time: 8 seconds**
    - **Acceleration:= -2.5 { m/s}^2)**
7. **A car moves at a speed of 60 m/sec. If the driver used the brakes to decrease the speed so it decreases by 3 m/sec^2. Calculate its speed after 10 seconds from using the brakes.**
8. **Initial speed: 60 m/s**
9. **Deceleration: 3 m/s^2**
10. **Time: 10 seconds**
11. **Final speed: (60 \text{ m/s} - (3 \text{ m/s}^2 \times 10 \text{ s}) = 60 \text{ m/s} - 30 \text{ m/s} = 30 \text{ m/s})**
12. **Calculate the time required for moving an object at acceleration 4 m/sec^2, knowing that the change in the speed equals 28 m/sec.**
13. **Acceleration: 4 m/s^2**
14. **Change in speed: 28 m/s**
15. **Time: (\frac{28 \text{ m/s}}{4 \text{ m/s}^2} = 7 \text{ s})**
16. **The opposite graph shows a car moving in a straight line through two intervals of time (AB), (BC). Calculate the acceleration for (AB), (BC).**
17. **Without the graph, I can't provide specific values, but generally:**
18. **Acceleration (AB) = (\frac{\Delta v{AB}}{\Delta t{AB}})**
19. **Acceleration (BC) = (\frac{\Delta v{BC}}{\Delta t{BC}})**
20. **Mention the kind of acceleration:**
21. **If the speed is increasing, it's positive acceleration.**
22. **If the speed is decreasing, it's negative acceleration (deceleration).**
23. **Look at the opposite diagram which represents the motion of a train from (A B C D), then answer:**
24. **Mention the kind of motion in part (BC):**
25. **Without the diagram, I can't provide specific details, but generally:**
26. **If the speed is constant, it's uniform motion.**

27. **If the speed is changing, it's accelerated motion.**
28. **Calculate the acceleration at which the train moves at the last 2 seconds (part CD), and mention the kind of acceleration:**
29. **Acceleration (CD) = (\frac{\Delta v*{CD}}{\Delta t*{CD}})**
30. **The kind of acceleration depends on whether the speed is increasing or decreasing.**
31. **If you know that the circumference of the circle = (2\pi r) (where (\pi = \frac{22}{7}), (r =) radius) in the opposite figure, a body moves in a circular path with a radius of 7m from point (A) to (B) within 3.5 sec. Calculate:**
32. **Total distance: (2\pi r = 2 \times \frac{22}{7} \times 7 = 44 \text{ m})**
33. **Total displacement: Since it's a circular path, displacement depends on the specific points (A) and (B).**
34. **Velocity: (\frac{\text{Total distance}}{\text{Time}} = \frac{44 \text{ m}}{3.5 \text{ s}} = 12.57 \text{ m/s})**
35. **A body moves from point (a) to point (b), then changes its direction to point (c). Calculate:**
36. **Total distance which the body moved: Sum of distances from (a) to (b) and (b) to (c).**
37. **Displacement done by the body: Straight-line distance from (a) to (c).**
38. **The opposite figure represents a car starting its motion from point (A) to point (F) passing by points B, C, D, E. Calculate:**
39. **Total distance covered by the car: Sum of distances between all points.**
40. **Displacement done by the car: Straight-line distance from (A) to (F).**
41. **Velocity if you know that the total time spent by the car equals 10 seconds: (\frac{\text{Displacement}}{\text{Time}})**
42. **An object is put at a distance of 20 cm from a mirror. The image is formed on a screen and has a length equal to the object.**
43. **What is the type of mirror? Concave mirror**
44. **Calculate the focal length of the mirror: Since the image is formed on a screen and is equal in size to the object, the object is at the center of curvature. Therefore, the focal length is half the distance: (\frac{20 \text{ cm}}{2} = 10 \text{ cm})**
45. **Draw the path of rays that shows the formation of this image: (Drawing required)**
46. **A body of length 1 cm is put at a distance of 4 cm from a concave mirror, its focal length 2 cm.**
47. **Draw a diagram to show the path of rays at which the eye can see the image of the body: (Drawing required)**
48. **Mention the properties of the formed image: Virtual, erect, and magnified.**
49. **A person stands in front of a plane mirror at a distance of 10 meters. What is the distance he must move so that the distance between him and his image becomes 6 meters?**
50. **He must move 2 meters closer to the mirror.**
51. **An object is placed at a distance of 20 cm from a spherical mirror with a radius of curvature of 20 cm and when the mirror is displaced 5 cm toward the object, an image is formed on a screen.**
52. **Mention the type of mirror: Concave mirror**
53. **Determine the position of the formed image: Since the object is at the center of curvature, the image will also be at the center of curvature.**
54. **Write the properties of the formed image: Real, inverted, and same size as the object.**
55. **Show by drawing the path of rays: (Drawing required)**
56. **Complete:**
57. **The opposite figure and trace the incident light ray on two mirrors (Y) and (X): (Drawing required)**
58. **The opposite Figures show two plane mirrors (A) and (B). If a light ray falls on mirror (A) and reflects in mirror (B) as in the figure. Calculate each of the following:**
59. **The angle of incidence of the light ray on mirror (A): Equal to the angle of reflection.**
60. **The angle of reflection of the light ray from mirror (B): Equal to the angle of incidence.**
61. **The angle between the two mirrors: Depends on the specific angles given in the figure.**
62. **Noha stands at a distance of 3.5 m from a plane mirror and there is a barrier behind her at a distance of 1 m.**
63. **What is the distance between Noha and the image of the barrier in the mirror: (3.5 \text{ m} + 1 \text{ m} + 1 \text{ m} = 5.5 \text{ m})**
64. **Complete the path of these rays: (Drawing required)**
65. **Q4: Give reasons for:**
66. **The motion of the train is motion in one direction.**
67. **Because it follows a straight path without changing direction.**
68. **It is hard to measure regular speed for a car practically.**
69. **Due to variations in speed caused by traffic, road conditions, and other factors.**
70. **The body moves with acceleration can't move at regular speed.**
71. **Because acceleration implies a change in speed.**
72. **Distance is a scalar quantity, while displacement is a vector quantity.**

73. **Distance only measures the magnitude, while displacement measures both magnitude and direction.**
74. **It is hard to measure the regular speed of a car practically.**
75. **Due to constant changes in speed caused by various factors.**
76. **A moving car seems to be at rest relative to the rider of another moving car beside it with the same speed and direction.**
77. **Because their relative speed is zero.**
78. **Physicists use mathematical relations like graphs and tables in many physical phenomena.**
79. **To visualize and analyze data more effectively.**
80. **The body which moves at acceleration can't move at regular speed.**
81. **Because acceleration means a change in speed.**
82. **An acceleration is a vector physical quantity.**
83. **Because it has both magnitude and direction.**
84. **Pilots take into consideration the velocity of the wind.**
85. **Because it affects the plane's speed and direction.**
86. **Concave lens has a virtual focus.**
87. **Because it diverges light rays.**
88. **Long-sighted person cannot see close objects clearly.**
89. **Because the image is formed behind the retina.**
90. **Q5: What is meant by each of the following:**
91. **A moving car covers a distance of 100 km in two hours.**
92. **The car's average speed is 50 km/h.**
93. **The relative speed of a train = 90 km/h.**
94. **The train's speed relative to a reference point is 90 km/h.**
95. **The change in the object's speed per unit time equals 100 m/sec^2.**
96. **The object's acceleration is 100 m/s^2.**
97. **A body moves at acceleration (decelerating motion) = -2 m/sec^2.**
98. **The body's speed is decreasing by 2 m/s every second.**
99. **A body moves 60 meters and the value of the displacement = zero.**
100. **The body returned to its starting point.**
101. **The displacement of a moving body changes by 2 meters every second in a certain direction.**
102. **The body's velocity is 2 m/s in that direction.**

Q6: Show by drawing only the path of rays which form an image of an object in front of a concave mirror at a distance of 10 cm if its focal length is 4 cm.

- **(Drawing required)**

Q7: Mention what happens in each of the following cases:

1. **A light ray falls on a concave mirror passing by its center of curvature.**
    - **The light ray reflects back along the same path.**
2. **Falling of a light ray parallel to the principal axis on a convex mirror.**
    - **The light ray reflects and appears to diverge from the focal point behind the mirror.**

Q8: Variant questions:

1. **An object is placed at a distance of 30 cm from the convex lens, its focal length 25 cm. Show by drawing the path of the rays and the properties of the image formed.**
    - **(Drawing required)**
2. **Two friends Ahmed and Ali were reading at the school library. Ahmed noticed that his friend was reading the only books which are far from his eyes. What's wrong with Ali?**
    - **Ali might be suffering from long-sightedness (hyperopia).**
3. **How can he solve his problem?**
    - **Ali can use convex lenses (reading glasses) to correct his vision.**

Q9: In the opposite figure:

1. **Which of the rays 1, 2, or 3 can pass without refraction? Why?**
    - **Ray 1 can pass without refraction if it is along the normal to the surface.**
2. **Through the focus? Why?**
    - **Ray 2 can pass through the focus if it is parallel to the principal axis before refraction.**
3. **From the opposite figures compare between the two lenses according to the focal length.**
    - **(Comparison required based on the figures)**
4. **Look at the opposite figure that represents two glass pieces, and then explain how you can arrange them to form:**
    - **Diverging lens: Arrange the pieces so that they are thinner in the middle and thicker at the edges.**
    - **Converging lens: Arrange the pieces so that they are thicker in the middle and thinner at the edges.**

Q10: What is the name of each living organism and mention the type of asexual reproduction in each:

- **(Details required based on the figures)**

Q11: From the opposite figure calculate:

1. **Total distance.**
2. **Displacement.**
3. **Velocity after the first five seconds.**
    - **(Calculations required based on the figure)**

Q12: Study the following figure which explains the steps of one of the biological phenomena, then answer the following questions:

1. **What's the name of this phenomenon?**
    - **(Details required based on the figure)**
2. **Mention the phase in which that phenomenon occurs.**
    - **(Details required based on the figure)**
3. **What is the type of its division?**
    - **(Details required based on the figure)**

Q13: Determine the intervals during which the body moves at uniform speed.

- **(Details required based on the figure)**

Q14: The time intervals during which the body is at rest.

- **(Details required based on the figure)**

Q15: The opposite figure represents a phase of division of a reproductive cell. Mention the name of this phase.

- **(Details required based on the figure)**

Q16: What is the type of cellular division it belongs to?

- **(Details required based on the figure)**

Q17: Mention the importance of this type of division.

- **(Details required based on the figure)**

Q18: What are the results which are produced if that phenomenon did not happen?

- **(Details required based on the figure)**

Q19: From the following figures answer the questions:

1. **The opposite graph represents the movement of a body from point (A) to point (C) passing by point (B). Calculate the following:**
    - **Speed**
    - **Velocity**
    - **(Calculations required based on the graph)**

Q20: In the opposite figure:

1. **An object is moving from point (C) to point (M) passing by two points (D, F) in (5 sec.), calculate:**
    - **The covered distance**
    - **The velocity**
    - **(Calculations required based on the figure)**

Q21: Look at the opposite figure then answer:

1. **To which type of cell division does it belong?**
    - **(Details required based on the figure)**
2. **What is the name of this phase?**
    - **(Details required based on the figure)**
3. **What happens in this phase?**
    - **(Details required based on the figure)**

Q22: From the opposite figure:

1. **Write the name of this phase.**
    - **(Details required based on the figure)**
2. **When does this phase happen?**
    - **(Details required based on the figure)**
3. **Why does the cell pass through this phase?**
    - **(Details required based on the figure)**

Q23: In the opposite figure:

1. **If the angle between the incident ray and the surface of the plane equals 130°, then the angle of reflection equals to:**
    - **a. 40°**
    - **b. 50°**
    - **c. 90°**

- **d. 130°**
- **Correct answer: d. 130°**

Q24: An object placed in front of a convex lens:

1. **The body and placed a plane mirror in front of them. When you look inside the mirror you find that there is no image formed. Determine the location of the body relative to the lens.**
    - **The body is at the focal point of the convex lens.**
2. **Why didn't the body image form inside the plane mirror?**
    - **Because the light rays are parallel after passing through the focal point and do not converge to form an image.**

Q25: Mention the name of the phase that indicates the following changes during the cell division:

1. **Spindle fibers begin to shrink, so two identical groups of chromatids are formed.**
    - **Anaphase**
2. **At the end of this phase, the nucleolus and nuclear membrane disappear.**
    - **Prophase**
3. **It occurs when a complete set of chromosomes that have the same number of the mother cell's chromosomes is formed.**
    - **Telophase**

إ

مجانا وحصريا

حمل الان

المراجعة رقم (3)







Write the scientific term:

1- The value of change of an object's speed in one second.

2- A flat and gaseous round disk that formed the solar system.

3- A mirror that forms a virtual, upright and small image for an object.

4- It contributes in genes exchanging between the two homologous chromosome's chromatids and distributing them in the gametes.

5- It is located in one of the spiral arms of the Milky Way.

6- Asexual reproduction occurs by using plant organs except seeds.

7- The line joining between the two centers of curvature of lens passing by the optical center.

8- It is the phenomenon of the light bouncing off in same medium when it meets the reflecting surface.

9- The angle between the reflected light ray and the normal.
10- The expansion of the universe and the atomic particles merged together producing helium and hydrogen.

11- The moving object covers equal distances at equal periods of time.

12- The point of connection of two chromatids together.

13- The change of displacement relative to time.

14- A point located inside the lens on the principal axis in the mid distance between its faces.

15- It contains genetic material from each parent when it grows; it gives a new offspring whose traits combine each parent's traits.

16- It is the change in the object's speed in one second.

17- It is any straight line that passes by the center of curvature of the mirror and any point on its surface except the pole of the mirror.

18- A phase in which chromosomes pairs arrange on cell's equator.

19- The force that keeps the continuity of planets rotation in their orbits.

20- The value of an object's speed determined in relation to an observer.

21- The force of attraction between the masses of two objects is directly proportion with the amount of their masses and inversely with the square of distance between them.

22- The total distance that a moving object covers divided by the total time taken to cover this distance.

23- The point of collection of the parallel rays after being reflected from the concave mirror and can be received on a screen.

24- A phase where some processes occur upon which the formation of a complete set of chromosomes that equal in numbers with the parental cell.

25- The space that contains all the galaxies, stars and planets.

26- The image that can't be received on a screen.

27- A phenomenon that occurs at the end of prophase 1 and contributes in genes exchange.

28- A disease resulting from the formation of the image behind the retina of the eye.

29- The biggest star that can be seen clearly by people on the earth surface.

30- The unit that is used to measure the distances between the celestial bodies.

31- Angle of incidence = Angle of reflection.

32- The shortest straight line between two positions of a moving object.

33- The revolving of the earth around its axis in a period of time.

34- The ability of some animals to compensate their missing parts.

35- Cells that lead to the formation of gametes that contain N chromosomes.

36- The point of collection of parallel rays in the concave mirror.

37- A phase in which some important biologogical process occur to prepare the cell for division and genetic material in the cell is doubled.

38- The point that is in the middle of the reflective surface of the mirror.

39- The combination of the male and the female gametes to form zygote.

40- It is the sun and eight planets revolving around it.

41- Twice the focal length of a spherical mirror.

42- The change of an object's location as time passes according to the location of another object.

43- A type of reproduction which considered a source of genetic variation.

44- A disease causes darkness of the eye lens.

45- An equipment was launched to the space; it allows astronomers an opportunity to study the evolution of the universe after the big bang.

46- A process in which the living organism produces individuals with hereditary traits different from the parents.

47- A cell division that occurs in the somatic cells and results in the growth of the living organism.

Give reasons:

1- Sexual reproduction is the source of variation between individuals.

2- The shortsighted person requires medical glasses with concave lenses.

3- Asexual reproduction produces offspring identical to the parents.

4-The perpendicular incident light ray on the plane mirror reflects on itself.

5- The continuous expansion of space.

6- The constancy of the Earth’s rotation in an orbit around the sun.

7- The difference in the day due to the difference of the planet.

8- The difference in the year due to the difference of the planet.

9- Force and acceleration are vectors physical quantities.

10- The long sight is treated by suitable convex lens.

11- Starfish continuous alive even a part of its body is cut.

12- The moving car seems stable to the observer moves with the same speed and direction.

13- The convex lens has two centers of curvatures, while the convex mirror has only one centre.

14- The uniform velocity of a car cannot be obtained practically.

15- It is impossible to obtain real image by using concave lens.

16- The focal vertex of the thick convex lens is less than the thin convex lens.

17- Interphase stage occurs before starting cell division.

18- The important of the crossing over phenomenon the first meiotic division.

19- Zygote contains the normal number of chromosomes of the organism.

20- The object that is placed at the focus of convex lens does not form an image.

21- Concave mirrors are used in solar ovens.

22- A convex mirror is put at the left side of the driver of the car.

23- The shortest year is on mercury planet.

Complete the following:

1- Speed measuring unit is.................. and the acceleration measuring unit is..

2- The somatic cells divide by .... while the reproductive cells divide by ....

3- The crossing over phenomena takes place during ....of the .... division.

4- The stars move in fixed orbits around the centre of the ....

5- The scientist who founds chaos theory that explains solar system formation is ……………………..

6-The genetic material in the nucleus of the cell consists of a number of ………………

7- From the examples of asexual reproduction, budding in ……….. Fungus

8- The chromosomes pairs are arranged in first metaphase in the ……… line of the cell

9- Meiosis cell division occurs in the anther of a flowering plant to produce ……...

10- The solar system is located in one of the spiral arms of ………… galaxy.

11- The longest day is of ………….. planet, whereas the shortest one is of ……….

12- The incident light ray which is parallel to the principal axis of a concave mirror reflects passing through …………………

13- The chromosome chemically consists of nucleic acid called ………… and protein.

14- The displacement is considered as ………… quantity, while the mass is considered as ………………… quantity.

15- The radius of the concave mirror equals ………… of its focal length.

16- It is impossible to obtain real image by using the ………… lens or plane ……..

17- The spindle fibers are formed during the cell division in ………. And disappear in ………………

18- Amoeba reproduces by …………… bread mold fungus reproduces by ……….

19- The result of multiplying (a speed of moving object × time) = …………..

20- The cell ………….. contains the genetic material which consists of number of …………………

21- …………….. is the image that can be received on a screen.

22- …………. Is structural unit of the universe and our galaxy is ………………..

23- From types of the asexual reproduction binary fission in ……………… budding as in ……………………

24- The chromosome consists of two connected threads at the Centromere point, each thread is called ………………….

25- ………. Are divided by meiosis which leads to the formation of ……......

26- …………….. rotates around the sun once every 12 earthly years.

27- Within minutes of the big bang, the atomic particles merged together producing ………… and …………… gases.

28- Meiosis division occurs in loving organisms that reproduce by …………..

29- The most important vision defects are ………….. and …………………..

Problems:

1- A convex lens with a focal length of 10 cm , an object was placed at a distance of 20 cm from the lens. Assign the distance of the object's image from the lens and mention its properties.

2- A race car can move from stationary position and its speed reaches 100 kilometers through 20 seconds. Calculate the acceleration of the car.

3- A body started to move from point x to point A covering a distance of 30 meters to the north in 20 seconds, then it moves 60 meters eastward to point b within 30seconds then it moves 30meters southward to point c within 10 seconds.

Calculate: 1- the total distance covered by the body

2- the total time taken by the body 3- the average velocity 4- the average speed

4- A car moves in straight line, if its speed changes 5m/sec to 10m/sec within 5 seconds. Find the acceleration and its kind.

5- An object is placed in front of convex lens at distance of 6 cm. knowing that the focal length of this lens is 3 cm.

1- Determine by drawing the position of the formed image

2- Mention the characteristics of such image

6- If the number of chromosomes in a human pancreatic cell is 23 pairs of chromosomes. What is the number of chromosomes in the following cells:

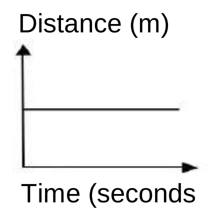
- Skin - sperm - fertilized ovum

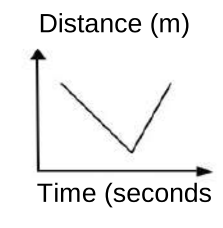
Choose the correct answer:

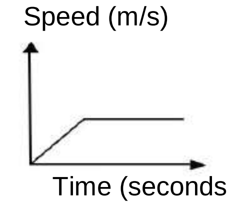
1- Which of the following graphical relations represents the moving of the body by uniform acceleration?

Speed (m/s)

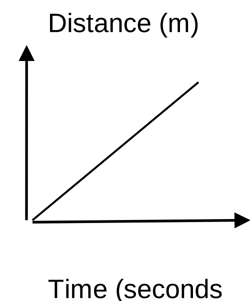
Time (seconds

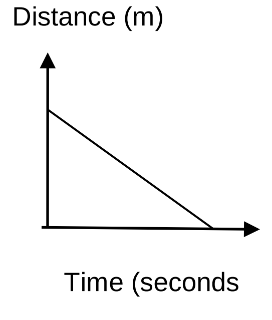


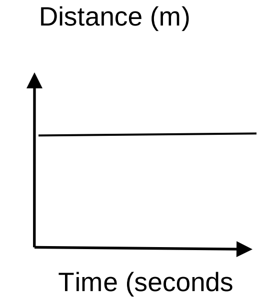




2- Which of the following graphs represent the movement of an object at constant speed?







3-The two factors can be used to describe the body motion are:

1- Speed and time 2- distance and time

3- Area and time 4- displacement and speed

4- The value of the speed (v) = d1+d2+d3 ÷ t1+t2+t3
That means the produced speed is …………………. Speed
1-average 2-increasing 3- nail 4-decreasing

5- A concave lens is placed in the passage of sun rays; a very small image for the sun is formed at a distance 5 cm from the optical centre of the lens, if this lens is used to form an equal image for a body, what is the distance between the body and the optical centre of the lens?
1- 5 cm 2- 10 cm 3- 50 cm 4- 60 cm

6- In which of the following cases the lift rider feels weightlessness phenomenon
1-when the lift ascends upwards with uniform acceleration
2-when the lift ascends upwards with uniform acceleration
3-when the lift descends with uniform velocity
4- When the lift falls

Various questions:

1- Draw a diagram to illustrate the image formed when the object at a distance more than double focal length of concave mirror.

2- Compare between long and short sight from the following points:
a- The type of lens used in treatment of each one
b-The cause of each one

3- Mention an activity to determine the radius of curvature of a concave mirror?

Wishing you all good luck
Mr. Mohamed

Model Answers

Write the scientific term:

1- The value of change of an object's speed in one second. **Acceleration**

2- A flat and gaseous round disk that formed the solar system**. Solar nebula**

3- A mirror that forms a virtual, upright and small image for an object. **Convex mirror**

4- It contributes in genes exchanging between the two homologous chromosome's chromatids and distributing them in the gametes. **Crossing over phenomenon**

5- It is located in one of the spiral arms of the Milky Way. **Solar system**

6- Asexual reproduction occurs by using plant organs except seeds. **Vegetative reproduction**

7- The line joining between the two centers of curvature of lens passing by the optical center. **Principal axis of the lens**

8- It is the phenomenon of the light bouncing off in same medium when it meets the reflecting surface**. Light reflection**

9- The angle between the reflected light ray and the normal. **Angle of reflection**

10- The expansion of the universe and the atomic particles merged together producing helium and hydrogen**. Big bang**

11- The moving object covers equal distances at equal periods of time. **Regular speed**

12- The point of connection of two chromatids together. **Centromere**

13- The change of displacement relative to time. **Velocity**

14- A point located inside the lens on the principal axis in the mid distance between its faces. **Optical center of the lens**

15- It contains genetic material from each parent when it grows; it gives a new offspring whose traits combine each parent's traits. **Zygote**

16- It is the change in the object's speed in one second**. Acceleration**

17- It is any straight line that passes by the center of curvature of the mirror and any point on its surface except the pole of the mirror. **Secondary axis of the mirror**

18- A phase in which chromosomes pairs arrange on cell's equator. **Metaphase**

19- The force that keeps the continuity of planets rotation in their orbits. Central **gravitational force**

20- The value of an object's speed determined in relation to an observer. **Relative speed**

21- The force of attraction between the masses of two objects is directly proportion with the amount of their masses and inversely with the square of distance between them. **Newton's law of universal gravitation**

22- The total distance that a moving object covers divided by the total time taken to cover this distance. **Average speed**

23- The point of collection of the parallel rays after being reflected from the concave mirror and can be received on a screen**. Focus of the mirror**

24- A phase where some processes occur upon which the formation of a complete set of chromosomes that equal in numbers with the parental cell. **Telophase**

25- The space that contains all the galaxies, stars and planets. **Universe**

26- The image that can't be received on a screen. **Virtual image**

27- A phenomenon that occurs at the end of prophase 1 and contributes in genes exchange. **Crossing over phenomenon**

28- A disease resulting from the formation of the image behind the retina of the eye. **Long sightedness**

29- The biggest star that can be seen clearly by people on the earth surface**. Sun**

30- The unit that is used to measure the distances between the celestial bodies. **Light year**

31- Angle of incidence = Angle of reflection. **First law of light reflection**

32- The shortest straight line between two positions of a moving object. **Displacement**

33- The revolving of the earth around its axis in a period of time. **Earth's day**

34- The ability of some animals to compensate their missing parts. **Regeneration**

35- Cells that lead to the formation of gametes that contain N chromosomes. **Reproductive cells**

36- The point of collection of parallel rays in the concave mirror. **The focus**

37- A phase in which some important biologogical process occur to prepare the cell for division and genetic material in the cell is doubled. **Interphase**

38- The point that is in the middle of the reflective surface of the mirror. **Pole of the mirror**

39- The combination of the male and the female gametes to form zygote. **Fertilization**

40- It is the sun and eight planets revolving around it. **Solar system**

41- Twice the focal length of a spherical mirror. **Radius of curvature**

42- The change of an object's location as time passes according to the location of another object. **Motion**

43- A type of reproduction which considered a source of genetic variation. **Sexual reproduction**

44- A disease causes darkness of the eye lens. **Cataract**

45- An equipment was launched to the space; it allows astronomers an opportunity to study the evolution of the universe after the big bang. **Hubble telescope**

46- A process in which the living organism produces individuals with hereditary traits different from the parents. **Sexual reproduction**

47- A cell division that occurs in the somatic cells and results in the growth of the living organism. **Mitosis cell division**

Give reasons:

1- Sexual reproduction is the source of variation between individuals.

Because the produced individuals combine the genetic traits from two different parents male and female. Besides the crossing over phenomenon that leads to genes exchange within the chromosomes of each parent.

2- The shortsighted person requires medical glasses with concave lenses.

Because the concave lens diverges the light rays before entering the eye lens so the image is formed on the retina.

3- Asexual reproduction produces offspring identical to the parents.

Because it depends on mitosis cell division that produces two identical cells similar to the parent cell.

4-The perpendicular incident light ray on the plane mirror reflects on itself.

Because angle of incidence equals the angle of reflection equals zero.

5- The continuous expansion of space.

Because galaxies move away from each other

6- The constancy of the Earth's rotation in an orbit around the sun.

Because the rotation of the earth around the sun is controlled by two equal forces which are: central gravitational force of the sun and centrifugal gravitational force of the

7- The difference in the day due to the difference of the planet.

Because planets differ from each other in:

- The length of the radius
- The speed of rotation around their axes.

8- The difference in the year due to the difference of the planet.

Because planets differ from each other in:

- The distant away from the sun.

- The speed of rotation around the sun.

9- Force and acceleration are vectors physical quantities.

Because they have magnitude and direction.

10- The long sight is treated by suitable convex lens.

Because the convex lens converges the light rays before entering the eye lens so the image is formed on the retina.

11- Starfish continuous alive even a part of its body is cut.

Because starfish reproduces mitotically by regeneration.

12- The moving car seems stable to the observer moves with the same speed and direction.

Because the relative speed between them equals zero.

13- The convex lens has two centers of curvatures, while the convex mirror has only one centre.

Because the convex lens has two spherical surfaces, while the convex mirror has only one spherical surface.

14- The uniform velocity of a car cannot be obtained practically.

Because the car speed depends on the traffics.

15- It is impossible to obtain real image by using concave lens.
Because the refracted rays by the concave lens are not intersected.

16- The focal vertex of the thick convex lens is less than the thin convex lens.

Because the radius of the thick convex lens is less than that of the thin one.

17- Interphase stage occurs before starting cell division.

To duplicate the genetic material and prepare the cell for division.

18- The important of the crossing over phenomenon the first meiotic division.

To make variation in the genetic traits among the members of the same species.

19- Zygote contains the normal number of chromosomes of the organism.

Because it is produced from the combination between the male and female gametes, since each one contains half number of chromosomes (N).

20- The object that is placed at the focus of convex lens does not form an image.

Because the refracting rays through the lens pass parallel and do not meet.

21- Concave mirrors are used in solar ovens.

Because they collect a large amount of solar rays in a focus.

22- A convex mirror is put at the left side of the driver of the car.

To form an erect, virtual and small image for the way behind the car.

23- The shortest year is on mercury planet.

Because it is the nearest planet to the sun.

Complete the following:

1- Speed measuring unit is **meter/second** and the acceleration measuring unit is **meter/second^2**

2- The somatic cells divide by **mitosis division** while the reproductive cells divide **by meiosis division**

3- The crossing over phenomena takes place during **first prophase** of the **meiosis** division.

4- The stars move in fixed orbits around the centre of the **galaxy**

5- The scientist who founds chaos theory that explains solar system formation is **La Place**

6-The genetic material in the nucleus of the cell consists of a number of **chromosomes**

7- From the examples of asexual reproduction, budding in **yeast** Fungus

8- The chromosomes pairs are arranged in first metaphase in the **equator** line of the cell

9- Meiosis cell division occurs in the anther of a flowering plant to produce **pollen grains**

10- The solar system is located in one of the spiral arms of **Milky Way** galaxy.

11- The longest day is of **Venus** planet, whereas the shortest one is of **Jupiter**

12- The incident light ray which is parallel to the principal axis of a concave mirror reflects passing through **the focus**

13- The chromosome chemically consists of nucleic acid called **DNA** and protein.

14- The displacement is considered as **vector** quantity, while the mass is considered as **scalar** quantity.

15- The radius of the concave mirror equals **twice** of its focal length.

16- It is impossible to obtain real image by using the **concave** lens or plane **mirror**

17- The spindle fibers are formed during the cell division in **prophase** and disappear in **telophase**

18- Amoeba reproduces by **binary fission** bread mold fungus reproduces by **spore propagation**

19- The result of multiplying (a speed of moving object × time) = **distance**

20- The cell **nucleus** contains the genetic material which consists of number of **chromosomes.**

21- **Real** is the image that can be received on a screen.

22- **Galaxy** Is structural unit of the universe and our galaxy is **Milky Way**

23- From types of the asexual reproduction binary fission in **amoeba** budding as in **yeast fungus**

24- The chromosome consists of two connected threads at the Centromere point, each thread is called **chromatid**

25- **Reproductive cells** Are divided by meiosis which leads to the formation of **gametes**

26- **Jupiter** rotates around the sun once every 12 earthly years.

27- Within minutes of the big bang, the atomic particles merged together producing **hydrogen** and **helium** gases.

28- Meiosis division occurs in loving organisms that reproduce by **sexual reproduction**

29- The most important vision defects are **short sightedness** and **long sightedness**

Problems:

1- A convex lens with a focal length of 10 cm , an object was placed at a distance of 20 cm from the lens. Assign the distance of the object's image from the lens and mention its properties.

The distance between the image and the lens = 20cm

The properties of the image: (Real, inverted and equal in size to the body)

2- A race car can move from stationary position and its speed reaches 100 kilometers through 20 seconds. Calculate the acceleration of the car.

A = v2 – v1/ t = 100000 – 0/ 20 = 5000m/sec2

3- A body started to move from point x to point A covering a distance of 30 meters to the north in 20 seconds, then it moves 60 meters eastward to point b within 30seconds then it moves 30meters southward to point c within 10 seconds.

Calculate: 1- the total distance covered by the body (30 + 60 + 30 = 120 meter)

2- The total time taken by the body (20 + 30 + 10 = 60 seconds)

3- the average velocity(60/60= 1 m/sec) 4- the average speed (120 /60= 2 m/sec)

4- A car moves in straight line, if its speed changes 5m/sec to 10m/sec within 5 seconds. Find the acceleration and its kind.

$A= V_2 – V_1/ t = 10-5/5 = 1 m/sec^2$. Positive acceleration

5- An object is placed in front of convex lens at distance of 6 cm. knowing that the focal length of this lens is 3 cm.

1- Determine by drawing the position of the formed image (on the center of curvature at a distance of 6 cm)

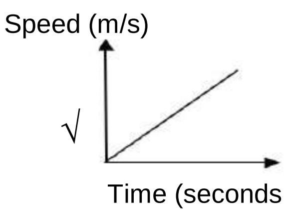
2- Mention the characteristics of such image
(Real, inverted and equal in size to the body)

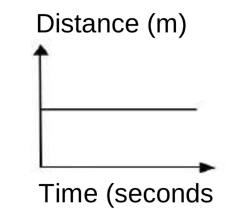
6- If the number of chromosomes in a human pancreatic cell is 23 pairs of chromosomes. What is the number of chromosomes in the following cells:

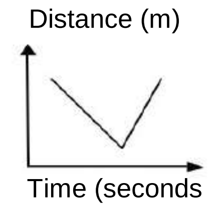
- Skin (46) - sperm (23) - fertilized ovum (46)

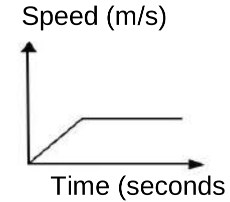
Choose the correct answer:

1- Which of the following graphical relations represents the moving of the body by uniform acceleration?

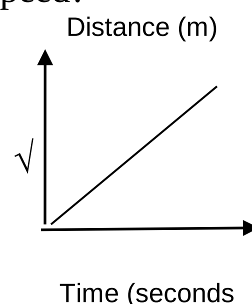


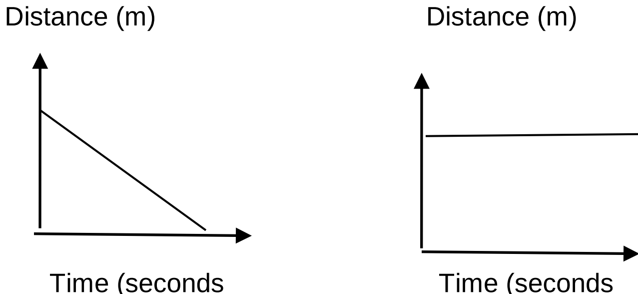






2- Which of the following graphs represent the movement of an object at constant speed?



3-The two factors can be used to describe the body motion are:

1- Speed and time 2- distance and time
3- Area and time 4- displacement and speed

4- The value of the speed (v) = d1+d2+d3 ÷ t1+t2+t3
That means the produced speed is …………………. Speed
1-average 2-increasing 3- nail 4-decreasing

5- A concave lens is placed in the passage of sun rays; a very small image for the sun is formed at a distance 5 cm from the optical centre of the lens, if this lens is

used to form an equal image for a body, what is the distance between the body and the optical centre of the lens?

1- 5 cm 2- 10 cm 3- 50 cm 4- 60 cm

6- In which of the following cases the lift rider feels weightlessness phenomenon

1-when the lift ascends upwards with uniform acceleration

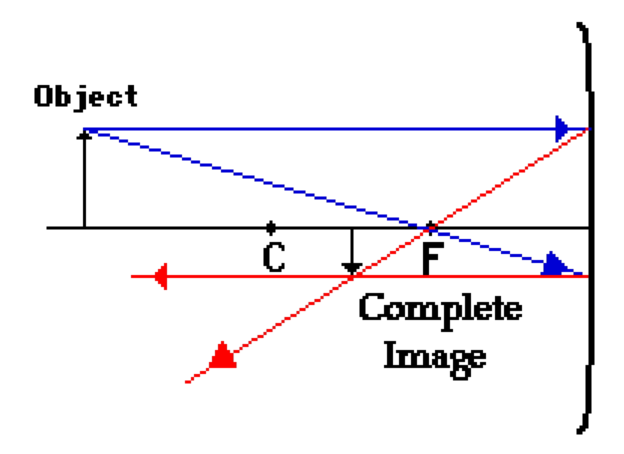
2-when the lift ascends upwards with uniform acceleration

3-when the lift descends with uniform velocity

4- When the lift falls

Various questions:

1- Draw a diagram to illustrate the image formed when the object at a distance more than double focal length of concave mirror.



2- Compare between long and short sight from the following points:

a- The type of lens used in treatment of each one

b-The cause of each one

Short sight	Long sight
What causes it? a. The diameter of the eyeball is too long. b. The curvature of convex lens is Strong.	What causes it? a. The diameter of the eyeball is too short. b. The curvature of convex lens is weak.
4. It is treated (corrected) by using Concave lens (diverging lens).	It is treated (corrected) by using convex lens (converging lens).

3- Mention an activity to determine the radius of curvature of a concave mirror?

Steps:

1. **Place a concave mirror on a holder in front of a light source (description: a box which contains a bulb & light shines through a tiny opening)**
2. **Move the mirror at different distances until you get an image equal in size to the original spot of light.**
3. **Measure the distance between the mirror & the opening of the box.**

Mr. Mohamed Taha

Conclusion

The **focal length** is the distance between the focus & the pole.
the focal length = ½ the radius of the curvature



تمنياتى للجميع دوام التوفق

Mr. Mohamed Taha

حمل الآن

مجانا وحصريا

المراجعة رقم (4)

الترم الاول





Unit One – Lesson1

Motion in One Direction

I) Complete the following statements:

1. The ……………. is defined as the speed of moving object relative to the observer .

2. The total distance that a moving object covers divided by the total time taken to cover this distance is known as ……………….

3. The uniform speed of a car is 90 km/ hour so, its speed equals ………… m/s.

4. When the average speed of an object equals the uniform speed in this case the motion represents …………… motion.

5. The relative speed of moving object depends on …………………..

II) Write the scientific term:

1. The distance that a moving object covers within a unit time. [……………….]

2. The speed in which the object moves to cover equal distances at equal periods of time. [……………….]

3. The speed of moving object relative to the observer. [……………….]

4. The change in the position of a body by time relative to the position of another body. [……………..]

5. The simplest type of motion. [……………..]

III) Put (√) or (×) then correct what is wrong:

1. When a moving object covers equal distances at equal periods of time so it moves with uniform acceleration ( )

2. A car moves with regular speed covers 500 meters in 20 sec. its speed is 200 m/s

3. Average speed is the speed of a moving object relative to the observer ( )

4. Measuring the relative speed for a moving car depends on the presence of speedometer which determines the speed value. ( )

5. The relative speed of two moving bodies in the same direction equals the sum of their speed. ( )

Mr.M.Sultan 01060693893

IV) Give reasons for:

1. The moving car seems stable to an observer moves with the same speed and direction.

…………………………………………………………………………………

2. The uniform speed of a car can't be obtained practically.

…………………………………………………………………………………

3. The motion of the trains can be considered as a motion in one direction.

…………………………………………………………………………………

V) Define each of the following:

(1) Speed

…………………………………………………………………………………

(2) Irregular speed

…………………………………………………………………………………

VI) Problem

A runner covered a distance of100 meters to the north in 30 seconds , then 50 meters to the east in 10 seconds , then 100 meters to the south in 15 seconds , then he came back again to the starting point in 5 seconds . Calculate:

1. The total distance covered by the runner.

……………………………………………………………………………….

2. The average speed of the runner.

………………………………………………………………………………

Lesson Two

Graphic Representation of Moving in a straight line

I) Complete:

1. The value of change of an object's speed in one second is ……………….

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2. When an object moves with decelerating motion this means that it's ………… speed is greater than it is ……………. Speed.

3. For a car moves with regular speed , the ratio d / t is ………………

4. The ratio between the final speed and initial speed for an object moves with accelerating motion is ……………. one.

II) Write the scientific term:

1. The graph for a regular motion at uniform speed which is represented by a straight line parallel to the (×) axis. [……….……………]

2. The change of the object's speed by equal values through equal period of time. […………………….]

3. The graph for a regular motion at uniform speed which is represented by a straight line passes through – the origin point. […………………….]

III) What's the difference between:

1. Speed – acceleration (Definition – measuring unit)

………………………………………………………………………………………

………………………………………………………………………………………

2. The graphical relation (distance – time) and the graphical relation (speed – time) for regular motion in a straight line at constant speed.

………………………………………………………………………………………

………………………………………………………………………………………

………………………………………………………………………………………

IV) Problem:

- A racing car starts moving from the rest. Then its speed increased to 900 m/s through 5 second.

Calculate the acceleration of the moving car.

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- A car moves at speed 100 km / h if the driver reduces its speed by a rate of

-2km / h^2 calculate the car's speed after half hour.

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Lesson three

Physical Quantities Scalars and vectors

I) Complete the following:

1. The ………….. is a vector quantity while …………. is a scalar quantity .

2. …………….. is the covered distance in a constant direction and is a vector quantity.

3. The vector quantity that identifies it a accurately and is necessary to identify it's …………………. as well as ……………..

4. Average velocity =........ ....

II) What's the difference between:

- Distance and displacement (Definition only).

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- Scalar quantity and vector quantity (Definition and Examples).

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III) What is meant by?

1. The displacement of on object is 60 meters in east direction.

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2. The average velocity of a moving car is 80 km / h

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IV) When dose the following cases happen:

1. The displacement covered by a moving body equals zero.

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2. The distance and displacement of a moving object are equal.

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V) Problem:

1. A tennis ball falls from a height of 30 m. then it rebounds from the ground to upward a distance of 6m. Find the distance covered by the ball and the displacement .

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2. If a body starts its motion from point (a) covered 20 meters northward till point (b) within 20 seconds, then 50 meters eastward till point (c) within 10 seconds then 20 meters southward till point (d) within 5 seconds calculate the average velocity .

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3. A body moves in a circular path, starting from the point A to B to C to D and returns back to the start point (A) if the circumference of the path is 200 meters and the body covered the distance (ABC) within 10 seconds. Then it covered the distance (CDA) within 20 seconds calculate:

1) The total distance the body moved.

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2) The average speed of the body.

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3) The displacement.

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VI) Give reasons for:

1. Velocity and acceleration are vector quantities. While distance and length are scalar quantities.

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2. Pilots take in consideration the velocity of the wind.

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VII) Write the scientific term:

1. The length of shortest straight line between primary position and final position. [………………………]

2. The rate of change of displacement. [………………………]

3. The vector quantity which is measured in m/s^2. [………………………]

Unit Two – Lesson one

Mirrors

I) Write the scientific term:

1. The rebounding of light to the same side when it strikes a reflecting surface. [………………………]

2. The angle between the incident light ray and the perpendicular line on the reflecting surface. [………………………]

3. Angle of incidence = Angle of reflection. [………………………]

4. The point of collection of parallel light rays to the principal axis of the concave mirror. [……………………….]

5. Twice the focal length of a spherical mirror. [……………….………]

II) Put (√) or (×) in front of the following statements and correct the false ones:

1. The distance between the object and a plane mirror is more than the distance between the plane mirror and the image. ( )

2. When the angle between the incident ray and the plane mirror surface is 60º, so the angle of reflection is 50º. ( )

3. The formed image for a body put in front of a convex mirror is virtual, Inverted and small. ( )

4. A spherical mirror of diameter equals 14 cm , its focal length is 6 cm .( )

5. The focus is the point that is in the middle of the reflective surface of the mirror. ( )

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III) Give reasons for:

1. Concave mirror is used in cooking by using solar energy.
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2. A convex mirror is put at the left side of the driver of the car.

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3. The incident light ray falling perpendicular on a reflecting surface reflects on itself

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4. The word AMBULANCE is written in a converted way on the ambulance car.

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IV) Show by drawing the path and the direction of rays in the following cases:

• An object in front of a concave mirror at a distance less than its focal length (Determine the properties of the formed) image.

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• The image that is formed by the convex mirror.

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• An object in front of a concave mirror at a distance of 7 cm .Knowing that its focal length is 5 cm.

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V) An object is put at a distance 20 cm from a mirror the image is formed on a screen and has a length equal to the object.

(1) What is the type of the mirror?

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(2) Calculate the focal length of the mirror.

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(3) Draw the path rays that show the formation of this image.

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Lesson (2) – Lenses

I) Complete the following statements:

1. A point inside the lens placed on the principal axis in the mid distance between its faces is ………………………

2. The radius of the convex lens = ……………… Its focal length.

3. The long sighted person needs a medical eye glasses with ………… Lenses.

4. The optical piece that forms an equal. Inverted image of the body is the ……….

II) Write the scientific term:

1. The line joining between the two centers of curvature of the lens and passing through the optical center. [ ]

2. A vision defect results due to the formation of the image in front of retina. [ ]

3. The lenses that are used instead of glasses and can stick to the eye cornea. [ ]

4. A disease infects the eye lens, so it becomes dark. [ ]

III) Give reasons for:

1. The convex lens has two foci, but the concave mirror has one focus.

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2. The short – sightedness is treated by using a concave lens .

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3. it's impossible to obtain a real image by using a concave lens.

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4. The convex lens is called converging lens while the concave lens is called diverging lens .

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IV) What happens when?

1. A light ray is incident parallel to the principal axis of the convex lens.

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2. The eye lens is too convex.

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3. A light ray passes through the optical center of the lens.

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V) Define each of the following:

1. The lens.

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2. The center of curvature of the lens face.

……………………………………………………………………………………

3. Short sight defect. ……………………………………………………………………………………

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VI) Problem:

1. A concave lens has a focal length equals 3 cm. An object is placed at a distance of 4 cm. From the lens, determine the position of the formed mage and its properties by drawing the light rays.

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2. A convex lens. Its focal length equals 5 cm. An object is placed at a distance 7 cm from the lens; determine the position of the formed image and its properties by drawing only two light rays.

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3. Mention the position and properties of the image formed of an object is put at a distance less than the focal length.

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4. A convex lens with focal length of 20 cm an object was placed at a distance of 40 cm from the lens. Assign the distance of object's image from the lens and mention its properties.

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Unit Three – Lesson 1

The universe

I) Write the scientific term:

1. The sun and eight planets revolving around it. […………………….]

2. It's located in one of the spiral arms of the Milky way galaxy. […………………….]

3. It contains all the stars we see at night in the sky. [……………………..]

4. The distance that is covered by light in one year. [……………………..]

II) The scientists have different theories about the history of the universe some of them believe in the opened universe theory. Others believe in the closed universe theory.

- Mention the opinions of both.

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III) Give reasons for:

1. Our galaxy is called Milky Way galaxy.

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2. The continuous expansion of the space.

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3. The gravity has important role in cosmogony of the universe.

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IV) Complete the following statements:

1. Each galaxy has a distinctive shape according to ……………. and ………… of the groups of starts in universe.

2. The solar system is located in one of the spiral arms of ………… galaxy.

3. Within minutes of the Big Bang, the atomic particles merged together producing …………….. and …………………… .

4. The solar system contains a number of ………….. orbit the sun.

5. The sun takes about ……………. million years to complete one rotation around the center of the galaxy.

6. Bigger units of the universe are ………………

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Lesson 2 –The solar system

I) Complete the following:

1. The force of attraction between two objects is ………………… proportional to the product of their masses and is ……………… proportional to the square of the distance between them.

2. The ……………. rotates around the earth in a fixed orbit and …………… rotates around the sun once every earthly day .

3. The scientist who established ……………… theory is Laplace, but the scientist who established the modern theory of the world is …………………….

4. The longest day is on ……………. whereas the shortest day is on ……………

5. …………….rotates around the sun once every 12 earthly years.

II) Write the scientific term:

1. The time taken by the planet to complete one rotation around its axis. […………..………]

2. A flat gaseous round disk that formed the solar system. […………………..]

3. The force that keeps the continuity of the planets rotation in their orbits around the sun. […………….……..]

4. The planet that has the shortest year on its surface. [……………………]

III) Correct the underline words:

1. The modern theory for formation of the solar system according to Laplace is due to explosion of a star rotating around the sun.

2. The time of revolving Venus planet around its axis is one Earthly day.

3. The difference of day length from a planet to another is due to the speed of the planet rotation around the sun.

IV) What would happen ………?

1. When the distance between a planet and the sun increases.

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2. Due to the difference in speed of planet rotation around its axis.

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Explain the evolution of the solar system as the vision of the French scientist Laplace

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Unit Four – Lesson 1

Cell Division

I) Put (√) or (×) in front of the following statements and correct the false ones

1. The chromosome consists of a nucleic acid called RNA and protein. (   )

2. In the mitotic division, the spindle fibers are formed during inter phase and disappear in anaphase . (   )

3. The spindle fibers are formed in the plant cell from the centrosome. (   )

4. The nucleolus disappears through telophase of mitosis. (   )

5. Crossing over phenomenon occurs in the anaphase of first meiosis. (   )

II) Give reason for:

1. Crossing over is the source of genetic variation between members of the same species.

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2. The nucleus is the part of the cell division.

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3. Cellular division begins with inter phase .

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III) Write the scientific term:

1. The point of connection of two chromatids together. [……………………]

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2. It contributes in genes exchanging between the chromosome's chromatids and distributing them in the gametes. [....................]

3. A phase where some processes occur upon which formation of two cells each of them contains chromosomes that equal in number with the parental cell . [....................]

IV) If you have a plant that its cells have 20 chromosomes.

What is the number of chromosomes in the following cells?

(1) Leaf (2) ovum (3) pollen

(4) Fertilized ovum (5) stem (6) zygote (7) root

Lesson 2 – Sexual and Asexual Reproduction

I) Give reasons for:

1. Spore propagation is a type of asexual reproduction which is common in some fungi such as bread mould and mushroom.

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2. The zygote has the same no. of chromosomes of cells of parental organism.

....

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3. Starfish continues alive even a part of its body is cut .

....

....

4. Sexual reproduction is a source of the genetic variation .

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....

II) Mention the importance of:

1. The sexual reproduction in concerning of the genetic structure.

....

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2. Vegetative reproduction.

……………………………………………………………………………………….

III) What would happen?

1. Separating a starfish arm, while it contains a part of the central disc .

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2. Fusion of sperm with an ovum .

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IV) How does each of the following organisms reproduces (if it is asexually reproduction mention its type.

1- Sponge ………………………. 2- man ……………………………….

3- Bacteria………………………. 4- Hydra …………………………….

5- Bread mould …………………. 6- Paramecium …………………….

7- Starfish ……………………….

8- Plants (with no need of seeds) ……………………………………………

End of the section of units questions

Go to Exams Section.

Wishing you all good luck

Mr. Mohamed

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كيفية طباعة صفحات معينة من ملف معين



مثلا ازاى نطبع الصفحات من صفحة 4 الى صفحة 9

خطوة 1

خطوة 2 اختيار اسم الطابعة بتاعتك

خطوة 3 كتابة الصفحات المراد طباعتها نكتب رقم 4 ثم نكتب الشرطة دي - ثم نكتب 9

خطوة 4 اختيار نوع الورق

خطوة 5 اختيار A4

خطوة 6